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January, 1950

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GUEST EDITORIAL

Virginia's Program for the Rehabilitation of Alcoholics

THE treatment program of the Division of Alcohol Studies and Rehabilitation, newly established under the State Department of Health, has now been under way for just over a year. At present, facilities for treatment comprise an Out-Patient Clinic in continuous operation at the Medical College of Virginia, Richmond, since October 16, 1948 and a 12-bed In-Patient Service that has been receiving alcoholic patients in connection with the Clinic since April 13, 1949.

Virginia's program for the study of problems of alcoholism and the treatment of persons addicted to excessive use of alcohol, set up through legislation enacted by the General Assembly early in 1948, is the first project of its kind in the nation to be developed under the control and management of a state health department. This assignment of the problem to a health department marks a significant step in the growing recognition both in this country and abroad that the illness of alcoholism is a public health responsibility of great magnitude. Since the initiation of Virginia's pioneering activity, a number of other states have passed similar legislation and are developing alcoholic treatment centers.

The Virginia program has been planned with full recognition of the undeniable fact that chronic alcoholism is an illness that is extremely difficult to treat successfully. From earliest civilized times, the drunkard has been a familiar figure, a source of misery and distress to himself and his family, often an onerous responsibility to his community, and usually the despair of those who would restore him to a sober and productive life. A common attitude toward the alcoholic has been that he (or she) is a derelict not worth helping. A growing body of modern experience shows, however, that many alcoholics respond favorably to treatment and that the results of therapy can be very rewarding. In view of these considerations and the focus of public attention, in part evidenced by the recent legislation, upon the care of alcoholics, the Division of Alcohol Studies and Rehabilitation looks upon its present activities in the light of a study or pilot program. It is not pretended that the existing facilities of this Division are large enough or sufficiently developed to care for the entire needs of the State. Rather, it is hoped that through experience with the present Service, it will be possible to assess the problems of rehabilitation as encountered in the alcoholic population of Virginia, to establish reasonable expectancy and criteria of success in therapy, and to recommend methods of treatment and administrative practice for a full-sized rehabilitation plan.

The task assigned to the Division by the General Assembly is four-fold:

1. The treatment of those addicted to excessive drinking.
2. The rehabilitation of these persons to happy and useful lives, insofar as this is possible.
3. Research and study into the scientific and other aspects of alcohol in its effects upon human beings.

Per-RAW

4. The promotion of preventive and educational programs.

In carrying out these objectives, highest priority has been assigned to treatment and rehabilitation. Full use is being made of the results of modern research on the pathological physiology of alcoholism, its etiology, and its treatment in major centers throughout the world. Candid evaluation of such research—which is increasingly attracting the investigative attention of able minds—reveals that the causative factors in alcoholism are probably multiple and complex. Moreover, we do not yet clearly know exactly why or how a person becomes an alcoholic. Factors of physiological instability, personality inadequacy, maladjusted inter-personal relationships, overwhelming social and economic stresses, and spiritual and moral conflict can often be traced through the life history of those who have become alcoholics. In some cases, however, one seeks in vain for etiological or predisposing bases and one is confronted with a confused and unhappy victim whose illness seems ascribable simply to gradually and insidiously increased social drinking.

In view of our insufficient knowledge of the etiological factors and in view of the many-sided effects of the disease in its destructive attack on the integrity of the human organism, a sound approach to therapy must provide support and help in many or even all of the facets of human life: physical, psychological, social, economic and spiritual. Such treatment is costly and requires time but no other less comprehensive plan appears to be successful. There is at present no specific "cure" for chronic alcoholism. Chronic alcoholics can be helped to sobriety and such rehabilitated patients are considered to be "arrested". That is, they can lead worthwhile and satisfying lives as long as they remain completely abstinent. The "arrested" patient must always remember he is an alcoholic and accordingly live a life of absolute sobriety. Although the mechanisms are unclear, the evidence is incontestible that an alcoholic can never again use alcohol "normally".

It is difficult to say just how the change from a drinking alcoholic to an abstinent, "arrested" alcoholic is brought about. Certainly it involves the patient's recognition and frank admission that he is an alcoholic. Willingness to admit once and for all that he is powerless to handle alcohol, that his life has become unmanageable, and that he can never again drink normally, plus an overwhelming desire for help are essential steps in bringing a patient to treatment and in his eventual rehabilitation. Treatment at this phase can often guide the patient to take these steps. Although all patients of the Division are accepted entirely on a voluntary basis, many are at first skeptical, distrustful or even resentful and defiant. When such a patient in his first contact with the Clinic or Ward encounters a physician or other staff member who shows genuine interest in helping him, who listens without condemnation to his story, and who outlines realistically with him the ways in which he can repair his disorganized life, often a new courage is born and with it a new hope. The patient learns to accept his illness, and as his trust in his physician grows, he shares his fears, ambitions and disappointments, and follows with his doctor the long road of re-education in a new way of life. Medical and psychiatric examinations with indicated laboratory and psychological tests give the physician insight into the patient's capacities and limitations. Urgent difficulties are handled at once: an acute or chronic medical condition, a threatened divorce, a lost job. The medical social worker and occupational counsellor are on hand to help the physician and the cooperation of the patient's family and his employer is enlisted if this is desirable and if it is agreeable to the patient. Often new understanding between the patient and his family or his employer can be fostered.

Patients accepted by the Division are treated initially in the Out-Patient Clinic or

as In-Patients in the ward. Experience gained in the Virginia program as well as in the Yale Plan Clinic, New Haven, Connecticut, and elsewhere has shown that many patients can be helped through out-patient treatment alone. Regular contact with the Clinic may continue for a year or even more. Patients admitted to the In-Patient Service comprise those in an acutely intoxicated state or those requiring special diagnostic studies or treatment for which hospitalization is necessary. Some patients, for example, volunteer to take treatment with the new Danish drug, Antabuse, the administration of which must be initiated in the hospital. In-patients are usually hospitalized for about two weeks, the exact length of stay depending upon the circumstances of the individual case. On discharge from the ward, patients continue treatment through regular visits to the Out-Patient Clinic. It is felt that little can be accomplished without this long-continued follow-up treatment.

A word may be said about the role of Antabuse in the treatment of alcoholics. This drug, Tetraethylthiuramdisulphide, when taken by mouth in daily doses of 1 to 2 Grams exerts no untoward effect. If, however, alcohol in any form is consumed in addition to the Antabuse, there follows an extremely unpleasant reaction. Within a few minutes, the skin of the head, neck, limbs, and trunk becomes flushed and there is a rapid fall in blood pressure with acceleration of the pulse. The patient complains of dyspnoea, pounding headache, and often nausea. Emesis may occur. This reaction lasts about an hour, and then recedes and the patient sleeps. Investigations of Jacobsen and his co-workers in Denmark indicate that in the presence of Antabuse in the body, a considerable proportion of the alcohol ingested is broken down to acetaldehyde and that the symptoms of the reaction are those of acute acetaldehyde poisoning. Antabuse is still under clinical trial and is not yet available for general prescription use by the profession. The drug is being administered as a part of the total plan of treatment in certain volunteer patients of the Division, who are shown by clinical and laboratory examination to be free of cardiovascular-renal disease, liver damage, diabetes, or convulsive disorders. The patient receives 1 to 2 Grams of Antabuse a day for four days. On the fourth day, he is given 40 to 50 c.c. of whisky and experiences the characteristic reaction. He is then stabilized on approximately 0.5 Grams of Antabuse daily which he continues to take every day for several months after he leaves the hospital. The patient knows that as long as he takes Antabuse, he will have a reaction if he drinks alcohol. It should be emphasized that Antabuse is given as a part of the whole treatment program, providing a direct deterrent to drinking and supplementing those procedures aimed at helping the patient toward greater insight, more mature and stable behavior, and improved adjustment to his environment.

This brief commentary on the activities of Virginia's Division of Alcohol Studies and Rehabilitation is necessarily incomplete. It is premature to evaluate results of treatment except in preliminary terms. In attempting the rehabilitation of alcoholics, we are confronted with many difficult and unsolved issues. These should not be underestimated. We are convinced, however, that alcoholics are worth helping and that the general practitioner can play a valuable role. We believe that the issues to be faced are not insoluble and that with their solution will come a more successful fight against one of the great medical and social disorders of our time.

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THE PRESENT DAY CONCEPT OF INDUSTRIAL MEDICINE*

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When one speaks of industrial medicine today there remains in the minds of some people, lay and professional, some residual misunderstanding as to its present status in the scheme of things medical. Many people do not know just what it is. This misunderstanding arises in part by such loosely used terms as "Company Doctor", "Compensation Doctor", "Plant Doctor", "Mine Doctor", and the like. These misnomers cast an eerie light and produce shadows that distort the present day concept of industrial medicine. Industrial physicians today are striving, and succeeding in most quarters, in establishing a realistic and ethical pattern for industrial medicine, one that is fair and productive of benefits to all parties concerned. Management, labor and medical leaders have all contributed to a better understanding of this field of medical practice.

Perhaps another reason for this misunderstanding has been the failure of the profession as a whole to interest itself until the 20th century in understanding how the industrial physician works, what his ethical and professional relationships are, and what he hopes to accomplish. Far too often the private practitioner has had the feeling that the industrial physician is the intruder between the patient and the private physician; that he is primarily concerned with the rights of the employer and not of the employee; that he is too often concerned with reducing the costs of absenteeism and is not concerned with the welfare of the individual; that he is taking work away from the private physician and that he is disturbing confidential relationships. These are outdated and unrealistic approaches to one's thinking and they pay tribute to no one.

Industrial medicine is more than a babe in swaddling clothes. About 4,000 B.C. in one of the Egyptian Papyrus writing, reference was made to the fact that the type of work that people do has some bearing on the health of the individual.[1] Both Plato and Aristotle made mention of the fact that occupation is in some way related to health. Hippocrates, Galen, Paracelsus, and Agricola related occupation to health in their writing. Modern industrial medicine dates from about 1700 A.D. It was at this time that Bernardino Ramazzini published his book on the diseases of workers and gave us the real beginning of our present knowledge of occupational diseases.

Our great industrial expansion in this country began in the mining camps, the camps of the transcontinental railroads under construction and in the logging camps of the West and Northwest. These enterprises developed in previously unpopulated areas, areas where medical facilities of the ordinary community were not available. It then became necessary for employers in these areas to provide their own medical services for their employees. Here the term "contract practice" got its origin. For one reason or another the physician engaged in contract practice was stigmatized, if not ostracized.

The physician practicing industrial medicine today does not change his concept of medical ethics and does not seek to violate confidential relationships because he has elected to interest himself in the problems of both employer and employee. He has simply broadened his horizon. He now has a bilateral sphere of influence on the health of the worker. In the Medical Department of The Chesapeake and Potomac Telephone Companies we approach the problem with two very simple philosophies. The first of these is—"Do what is best for the individual employee, at the same time, then, you will be doing what is best for the Company." The second is—"If an employee is well he is expected to be on the job and to do his job well; if an employee is sick he is not expected to be on the job, but he is expected to seek and receive prompt and adequate medical care." In the administration of these philosophies day by day the effort is constantly made to cooperate in every possible way with the employee's personal physician, and in return we anticipate his cooperation with us. This cooperation is essential if wise and intelligent administration of the Company's Plan for the payment of sickness and

*Presented by invitation at the annual meeting of the Medical Society of Virginia at Old Point Comfort, October, 1949.

pension benefits is to be carried out in the interest of the employee.

Certain essential differences exist between the practice of medicine by the private practitioner and the practice of medicine in industry. The first of these differences exists in what is known as "third party" interest. This third party interest is that of the employer. This third party interest does not make it impossible for the physician to maintain confidential relationships with his patient, but the employer and the insurance companies have an interest in what goes on if for no other reason than the fact that the nature of the Workmen's Compensation Law is such that they *must* know what is going on. The third party must know that the individual is receiving the best possible medical care. Special problems arise in providing a healthy working environment for the worker. This requires, on the part of the industrial physician, a working knowledge of the problems of heating, lighting, ventilation and accident control. The problems produced by toxic fumes and gases and those posed by the occupational dermatoses are real ones to be faced by the industrial physician. He should be skilled in the prevention as well as in the recognition and treatment of disease, particularly those related to occupations. Certain skills of an administrative nature are required of him. These vary with the type of organization with which he is associated and the size of his Medical Department. He must be able to maintain a working and satisfactory relationship between the employee and himself and between the employer and himself and not stand between the employee and the employer. He is in the peculiar position of having to guide both of them. I have outlined these differences not to praise nor to defend the industrial physician, but to emphasize the fact that differences do exist. These are administrative differences and differences in required professional skill as applied to occupational disease.

Tabershaw[2] recently wrote, "During the past year emphasis was placed on the social phases of industrial medicine . . . the factors involved in the worker's mental and social welfare were of growing concern to industrial physicians."

"The industrial physician today may be said to be at the crossroads. Without deviating from the basic tenets of the profession he has been compelled to adapt himself to the demands of a fast developing and changing industrial economy. Each year the various forms of health insurance, group welfare funds and sick benefit and pension plans play a most significant part in relation to occupational medicine. The very nature of the industrial practitioner's work, dealing as it does with a specified segment of society, has placed him in an anamolous position. For example, though he adheres in theory to the basic precepts of the patient's free choice of a doctor, he cannot but violate it in actual practice."

Having provided you with the foregoing background, let me state some questions which I think you might very well be asking yourselves, or perhaps you have already asked them. First of all, let me say that you should interest yourself in the answers to these questions because they vitally affect the welfare of your individual patient.

First, why should I concern myself with the problem of absenteeism in industry?

Production schedules are geared to men and machines. Without men machines are worthless. Without men on the job production is slowed. With production slowed our economy is affected and thus the effects of absenteeism reach down and touch each one individually and collectively.

Second, who gains and what is gained when I take time from a busy practice to carefully and intelligently, and offtimes frequently, fill out sickness forms for a patient under my care? Third, why should I take time to discuss my personal patient's problems with the industrial physician?

I realize quite fully that a busy practitioner is offtimes irked by the number of sickness certificates which he must fill out for various patients. The information which we have requested on our certificates, which you fill out for us for the employees of the Telephone Company, is essential if we are to administer the Plan whereby these employees receive the sickness and pension benefits to which they are entitled. We have made every effort to keep these certificates as simple as possible. You can be most helpful to your patient and to us if you will furnish the requested information accurately and promptly. All too often, for example, the diagnosis is listed as "nervousness". Nervousness is not a diagnosis; it is a symptom. Such a statement gives us no idea of the etiology of the employee's nervousness nor what might be done toward correcting it. The nervous-

ness might be due to hyperthyroidism. It might be menopausal. It might be due to home or domestic difficulties. It might be due to a true psychoses or to an anxiety state. I quote Dr. Walter D. Woodward,[3] psychiatrist on the Medical Staff of the American Cyanamid Company, who was recently interviewed on the question of home environment and work production,—"On the job the employee has occupational therapy for eight hours a day, a chance to forget about himself, and an opportunity to reassure himself of his work. Thus, keeping the man on the job is frequently an important part of the therapy on the part of the industrial psychiatrist. Both the man and the industry profit by it. A majority of the labor turnover, particularly in the younger age groups may be traced to the emotional instability of the individual rather than to his job which he usually blames for his dissatisfaction." I have emphasized this problem of nervousness and emotional disorder because it is one of the largest ones with which we are dealing today. Your thoughtful approach to this problem will be of inestimable help to those of us doing industrial medicine. The time which you devote to filling out your certificates correctly, and the time which you take to discuss the problems of the individual employee with the industrial physician, will profit your patient, you and the industry.

Fourth, doesn't the expansion of an industrial medical department take practice away from me?

Many channels are open to the medical department in industry to continually assess and appraise the health of the employee group. Some of these channels are represented by occupational examinations for specific jobs with specific hazards to the individual employee and/or to his fellow employee. Additional channels are represented by follow-up programs for known cases of venereal disease, tuberculosis and for the handicapped worker. The examination of employees who are absent on disability leave, employees who are considered eligible for disability pensions, those who represent chronic, repeated sickness cases, those who show an incidental lost time above the average, and those who appear prone to accidents along with that group, represented by periodic health appraisals on a voluntary basis, offer further opportunity for the assessment and appraisal of the employees' health. These various channels offer the medical department in industry a board cross-section of its employee group which, on the basis of examinations made by the medical department, can be advised and directed into proper medical care by their own personal physician. All too often in our experience the employee fails to seek medical care unless he is directed to do so by us. By calling attention to needed medical care and referring the employee to his personal physician for this care we feel that we are assisting in increasing private medical care rather than taking work away from the personal physician. I should like to emphasize at this point that it is our policy to treat only emergency illness on the job and accidents on duty and not to give treatment involving continual care.

Fifth, does the industrial physician have the privilege and the right to say that an employee is able to return to the job when I have indicated that in my opinion he is not?

There cannot help but be differences of opinion among us whether we are in or out of industrial medicine. Consequently, there will be times when you feel that your patient should not be on the job and the industrial physician will disagree with you. In the vast majority of instances by calm discussion between the two of you an equitable solution to the problem can be reached. Our Companies certainly never insist that an employee return to duty against advice of his personal physician. However, the Companies must and do reserve to themselves the right to determine whether or not an employee absent from duty is entitled to sickness disability benefits under the intent of our Benefit and Pension Plan.

I should like to emphasize the importance of every physician taking an occupational history. It is not sufficient to know that your patient works for the government, in a store or in a factory. You must know something of what that patient does on the job in order to know whether or not it is influencing the patient's health and if he or she can safely carry out the job requirements without harm to self or fellow workers. It would be unreasonable to expect every practitioner of medicine to have a working knowledge of all job requirements, but your patient can tell you, for example, how much walking, standing, bending, climbing or stooping he has to do, how much he uses his hands, how much close use of his eyes his job requires, etc. The influence of the domestic environment and what that environment is

should be part of your patient's history. You must remember that the average worker spends 7½-8 hours a day, five days a week at his job and under its influence; the greater part of his life is spent away from the job and under other influencing factors. How does your patient get to and from his job? How long does it take him? These are real factors affecting his whole health outlook and particularly his emotional pattern. I would urge you to consider these influences and not to let yourself fall into the habit of "blaming everything on the job".

Medical science has gone forward by great leaps and bounds and one outstanding accomplishment has been to increase life expectancy since 1900 from 47 years to 67 years. This has brought us into the Age of Geriatrics. The problem of the older worker in industry is quite different from that of the younger worker. Your thoughtful approach to the problem of the older worker will help us in industry to better handle these people on the job.

Finally, I should like to say to you that industry must particularly interest itself in the field of preventive medicine if it is to be effective. To this end voluntary programs of vaccination on a mass basis are utilized when there are clear cut indications for them. Mass chest x-ray surveys in the industrial groups act as case finding instruments of accepted value. Organized health classes and health educational pamphlets, charts, and films teach the fundamentals of good health. Publications in the plant magazine, especially those adapted to seasonal conditions, have proved themselves highly acceptable and worthwhile. Health counselling by industrial physicians and nurses has proved popular and productive. Accident and safety programs are the joint responsibility of lay management and medical groups. The teaching of personal hygiene is best accomplished by the industrial nurse both in the clinic and in the home. A study of home and environmental conditions by the visiting nurse who represents management, but is at the same time a fellow worker, gives her unusual opportunities for teaching good health and for calling into action whatever community resources are available and needed. I do not believe these approaches to the field of prevention can do other than make for a better, healthier and stronger community, the place in which you and I work and live and play. To that end the private practitioner and the industrial physician have a joint responsibility for the health of the worker in our great industrial army.

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3. Woodward, W. D.: Health on the Job. No. 23, March, 1949.

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New Books.

The following are recent acquisitions of the Library of the Medical College of Virginia and are available to our readers under usual library rules:

Barnes—Gynecological histology.
Behrens—Atomic medicine.
Cameron—The psychology of behavior disorders.
Burrow—The neurosis of man.
Duke-Elder—The practice of refraction.
Leitner, S. J.—Bone marrow biopsy.
Overstreet—The mature mind.
Papers and discussions presented at the First International Poliomyelitis Conference.
Romer—Vertebrate body.
Snapper—Medical clinics on bone diseases. 2d ed.
Williams, ed.—Appraisal of human dietaries by animal experiment.

ROUTINE EPISIOTOMY AND IMMEDIATE PERINEORRHAPHY

M. PIERCE RUCKER, M.D.,
Richmond, Virginia.

From the earliest recorded history the perineum has been the concern of midwives and medical men alike. Hippocrates wrote that the perineum should be softened by emollient douches. Throughout the centuries various methods of guarding the perineum have been advocated. This indeed was an important subject, for, if extensive laceration occurred, all that could be done was to tie the woman's knees together and hope for the best. How much unhappiness and suffering parturitional injury to this structure has caused, is difficult or impossible to estimate. Good elastic perinea capable of extreme stretching may have been commoner in ancient times. Cleopatra must have had such an one for she retained her sex appeal after parturition and used it to good advantage on both Caesar and Anthony. The old girl was a gynecologist of note in her own right and was the author of a work that contained all that was known about woman in her time.

Until the 19th Century no attention was paid to first and second degree lacerations. Isolated attempts to cure third degree lacerations were made. The Arabian, Avenzoar (d.1162) taught that if the case were seen early, the thighs ought to be held together firmly so that the wound might heal, but if the case be seen late the edges of the wound were to be denuded and sewn together with silk thread. Trotula (d.1097) taught that if the laceration extended from the vulva into the rectum, it should be repaired with three or four sutures of silk thread and the area covered with linen cloth soaked in liquid tar. The tar was to make the uterus retreat to the upper part of the pelvis so as to get away from the bad odor. There are scattered attempts at perineal repair reported throughout the Middle Ages. In "De Secretis Mulierum" of Albertus Magnus (1193-1280) there is an account of one. Cosme Viardel (d.1694) successfully repaired a lacerated perineum three days after delivery. He used a continuous stitch. Paré (1510-1590) reported several successful operations. But it was not until Jean Palfyn (1649-1730) that obstetricians began to pay much attention to perineal lacerations. However, acceptance of his teaching was slow. William Smellie, (1697-1763) in commenting on a case with incontinence of feces, has this to say: "One of my pupils told me he had succeeded in a case, where only the *Perineum* was tore, by making immediately the twisted suture, as in hare-lip; however, as rents of the *Perineum* only are of little consequence, I never tried that method, imagining it dangerous to expose the woman so soon after delivery; and when the *Vagina* and the *Rectum* are tore into one, it is impossible to use the twisted suture. This last case is of more consequence, on account of the involuntary discharge of the *Fœces* though in time the parts by degrees recover in some measure their retentive faculty." The first to consistantly repair lacerated perinea was our fellow Virginian, John Peter Mettauer. In 1833 he did a successful late perineorrhaphy, using lead sutures, and in 1847 he reported six other cases. These were all 3rd degree lacerations. Sir James Y. Simpson, writing in the last half of the 19th Century, has this to say: "Operations for the relief of such cases were carried out by Guillemeau, and more recently by Roux, Noel and others. In America, Mettauer operated successfully, using lead wire for his sutures; and a mass of cases are scattered about in our surgical and gynecological records which sufficiently attest the value of this operation." Simpson reported a successful immediate repair of a third degree laceration, in which he used iron wire sutures. Encouraged by this result he repeated the operation but this patient died of peritonitis. For that reason he advocated postponement of such operations until all signs of inflammation had subsided.

Thus we see that, while guarding the perineum is an ancient technic, repairing a lacerated perineum is a modern procedure. John Harvie, who in 1767 wrote a book on preserving the perineum, described its care as follows: "So soon as the *vertex* of the child's head begins to push into the *os externum*, it must only be allowed to advance in a slow and gradual manner by the action of the labor pains.

"To do this properly the accoucher having directed his patient to lie down upon the bed in the usual position (i.e. the lateral) every pain must be attended to; and as soon as the pain has acted

long enough to render the *frænum* of the *perineum* tight, the further action of that pain must be totally prevented by the palm of the left hand applied against the *perineum* with a proper force.

"By observing this method in every following pain, a safe dilatation will be gradually produced. During the interval of pain, fresh hog's lard, the best ointment for that purpose, is to be insinuated upon the inside of the *perineum* and into all the *os externum.*"

Except for the position of the patient, such was the practice that the midwives followed even in our own day until the health authorities stopped or forbade their making internal examinations. The results were variable. Some patients actually preserved a normal thick perineum but most patients had various degrees of relaxation with a wide gaping introitus.

In 1871 Goodell summarizes the countless methods of protecting the perineum as follows: "There are those who make pressure upon the perineum to retard the head; those who make pressure to accelerate its advance; those who deny that any such effects can be thus produced, those who conscientiously use support because something must be done.

"Again, there are those who direct all the pressure at the *fourchette;* others who reprehend this, and as carefully guard the posterior perineum; and yet others who will not touch the perineum on any account. Further there are those who push the perineum backwards, and those who, for equally plausible reasons, push it forward. Some dilate the sphincter vagina; some the sphincter ani, and some who plug it up. Some place their hands transversely across the perineum; some longitudinally with the fingers looking upward; some longitudinally with the fingers looking downward; some who attack it with their knuckles. Some scoop out the head with the vectis; others drag it out by the ears, and yet others who rely on the forceps."

Bland, Naegle, Faust, Wigand, Schmidt, Ritgen, Killian, Grand-Champ, Danyau, Sacombe, Deleurye and Hunter McGuire believed that support is unnecessary. West, Swayne, Grailey, Hewitt, Taylor, Thompson and Leishman thought it positively injurious.

Simpson was apparently the first to note that lacerations occurred almost invariably in primiparous labors, and he advocated making a small nick on either side of the vulval ring in order to save the perineum. Von Ritgen recommended not two but as many as seven on either side. Before Simpson, Paré recognized that when the perineum was repaired the resulting scar would be so rigid that if subsequent pregnancy occurred the perineum would have to be incised, for, otherwise, the patient would never be delivered. Sir Fielding Ould recommended episiotomy when the perineum was rigid. According to Broomall, Carl Braun was the first to use the term episiotomy and the first to suggest the closure of such wounds was Montrose A. Pallen.

The term episiotomy rightly means incising or cutting the vulva or labium. According to Howard Taylor, Jr., a midline incision should be called a perineotomy. Just as lacerations of the perineum went for years before anyone thought of repairing them, so episiotomies and perineotomies were at first left to the healing force of nature. Montrose A. Pallen, as mentioned above, in 1876 was the first to suture these wounds.

At first episiotomies were done solely in the interest of the mother, i.e., to save her perineum. Anspauch and Pomeroy in the beginning of the 20th Century advocated the operation for all primiparous births and called attention to the advantage to the child. Howard Taylor, Jr., in 1937 added an additional indication, i.e., prematurity, so as to take the strain off the immature skull. Rucker and Greenhill advocate its use in all deliveries (unless that body has been destroyed at a previous labor). Such a plan shortens the second stage, relieves pressure on the fetus, minimizes anesthesia, and ensures a normal vagina postpartum. There are few complications. Even when union is not perfect the supporting structures remain in good function. Occasional cases of fistulo in ano have been reported, but these were due to a faulty technic in the perineorrhapy. I have had one recto-vaginal fistula. This healed spontaneously and the patient has undergone a subsequent delivery without complications.

Episiorrhaphy is no different in principle from perineorrhaphy after a perineal laceration except the tissues are more easily identified and a better anatomical closure is therefore possible. The swelling of the tissues after delivery and the consequent constriction of the sutures has long been a problem in perineorrhaphy. If sutures are tied so as to approximate the torn or divided tissues, in 24 hours they will cut into the tissues, causing pain and in-

terfere with the local blood supply. If they are tied more loosely they may not cause accurate apposition. I had devised an awkward way of overcoming this difficulty by brass tubes that could be screwed together and thereby be made shorter. The two ends of the interrupted suture were threaded through the brass tube in its extended position and tied. As the swelling and edema occurred the tubes were screwed together thus making them shorter and relieving the tension. Mettauer had accomplished the same thing when he untwisted his lead wires.

But there was a simpler way which I had overlooked because it was so simple. In 1928 Royston read a paper on the repair of complete perineal laceration in which he showed the harmful effects of knots. In the discussion, Haddon, of Palo Alto, described a method of using longitudinal sutures of silkworm gut with no knots. He had no illustrations and gave no references. I now find that this method has been used since 1903 by Somers of San Francisco for late repair of perineum. This, however, was unknown to me until a recent article by Robert B. Dunn in *Western Journal of Surgery, Obstetrics & Gynecology,* called attention to Somer's original work.

When I came home from the meeting in which I heard Royston's paper, I put Haddon's or Somer's technic, as I understood it, to test. Three or four strands of silk worm gut were all that were necessary to bring the divided tissues into accurate apposition. The ends within the vagina were threaded on a perforated shot and cut flush with the shot some ½ to 1 inch from the surface of the mucosa. The same treatment was accorded to the external ends of the silkworm gut. I was surprised to find that the next day the shots were drawn snugly against the vaginal mucosa and the skin. The only difficulty I had with this technic was with patients who left the hospital before it was time to remove the sutures. Sometimes they would cut the shot off themselves and in some instances their doctors would cut off the shot within the vagina. This made removing the sutures impossible. Sometimes they would work out and sometimes I would remove the silkworm at a subsequent episiotomy.

For this reason I switched over to catgut. At first I used No. 2 chromic, but with time I have used smaller and smaller sizes, as recommended by Pratt, until now I make use of 000. There have been no major complications. In a few cases the lower part of the wound for about one centimeter would break down. It did no particular harm, but it always caused questions from the patient. At first I thought it was due to the wound becoming infected, but it occurred to me after a while that it was due to the last suture being cut too short. As the swelling occurred in some cases the suture would pull loose to that extent. I now thread it on a large needle and bring this suture out some 10 c.m. from the wound. Since most of my episiotomies are done under pudendal block the only place I can find so much anesthetized space is on the left side of the vulva. Since adopting this technic several years ago, I have had no breakdowns of the lower end of the wound. Very occasionally the whole wound breaks down either because the catgut is absorbed or on account of infection. In such cases I do an intermediate repair with silk worm gut.

In summary, the routine employment of episiotomy shortens the second stage, thereby helping in pain relief. It preserves the perineum and in that way adds to the comfort and happiness of the patient in after years. It takes the stress off the baby's head. It is a definite aid in breech deliveries and in the delivery of premature babies.

WHAT HAPPENED IN POLIOMYELITIS IN VIRGINIA IN 1948*

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Lacking definitive knowledge of the epidemiology of poliomyelitis, its prevention and method of spread, it might appear to some of only academic interest to review what happened in Virginia in 1948. However, it may be that through the piling of observation upon observation some additional light may be cast upon the behavior of this still mysterious disease. To this end, we have attempted to compare what happened in Virginia in 1948 with what happened in Virginia in 1944, the last year of high incidence. For the purpose of this comparison we are fortunate in having the excellent study entitled "Observations on the 1944 Epidemic of Poliomyelitis in Virginia", presented by Dr. L. J. Roper as Chairman of the Section on Public Health of the Southern Medical Association at Cincinnati, in November, 1945.

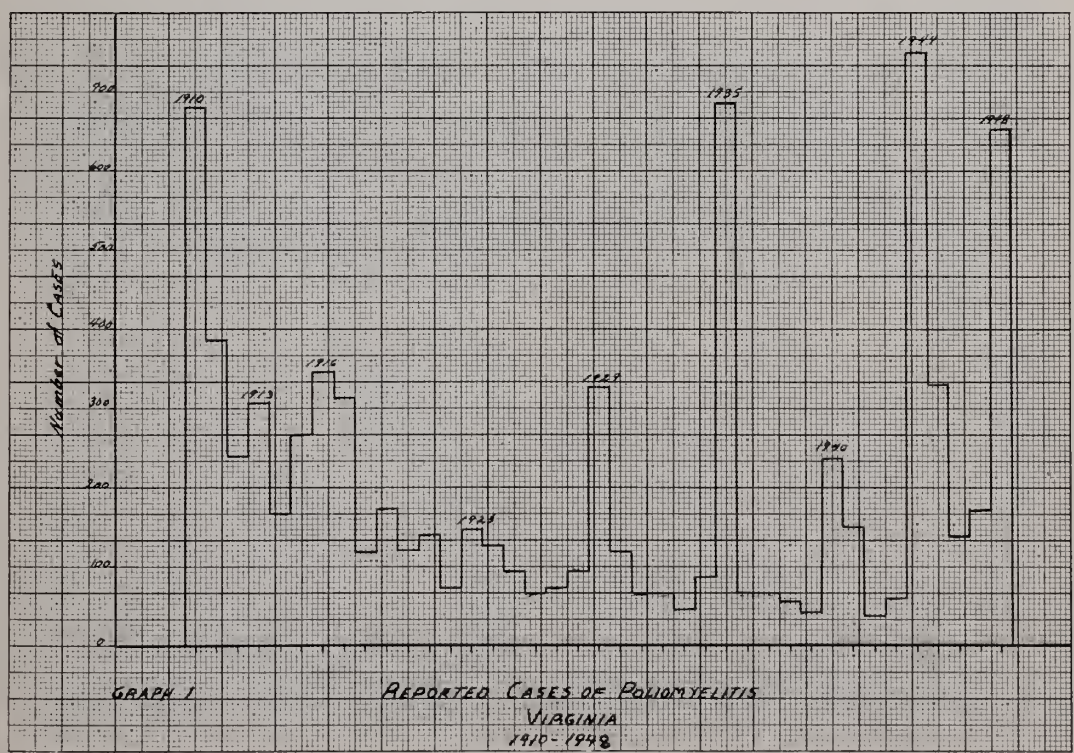
*Read before the Conference of (Virginia) State Health Workers in Roanoke, April 27-29, 1949.

INCIDENCE

An interesting, and we believe significant, fact about the high incidence of poliomyelitis in Virginia in both 1944 and 1948 is that the occurrence of high incidence years has followed a fairly regular pattern for 38 years.

Upon reference to Graph 1 it is evident that from 1910, a peak year, to 1916, another peak year, the yearly fluctuation in the number of reported cases of poliomyelitis was not marked. From 1916 on, however, there has been a significant increase in incidence every fifth or sixth year, and since 1940 every fourth year. The high incidence years were 1910, 1916, 1923, 1929, 1935, 1940, 1944, and last year, 1948.

It also appears on analysis of the years intervening that there has been an apparent hold-over increase the year following the high incidence year. If, therefore, the incidence of poliomyelitis follows



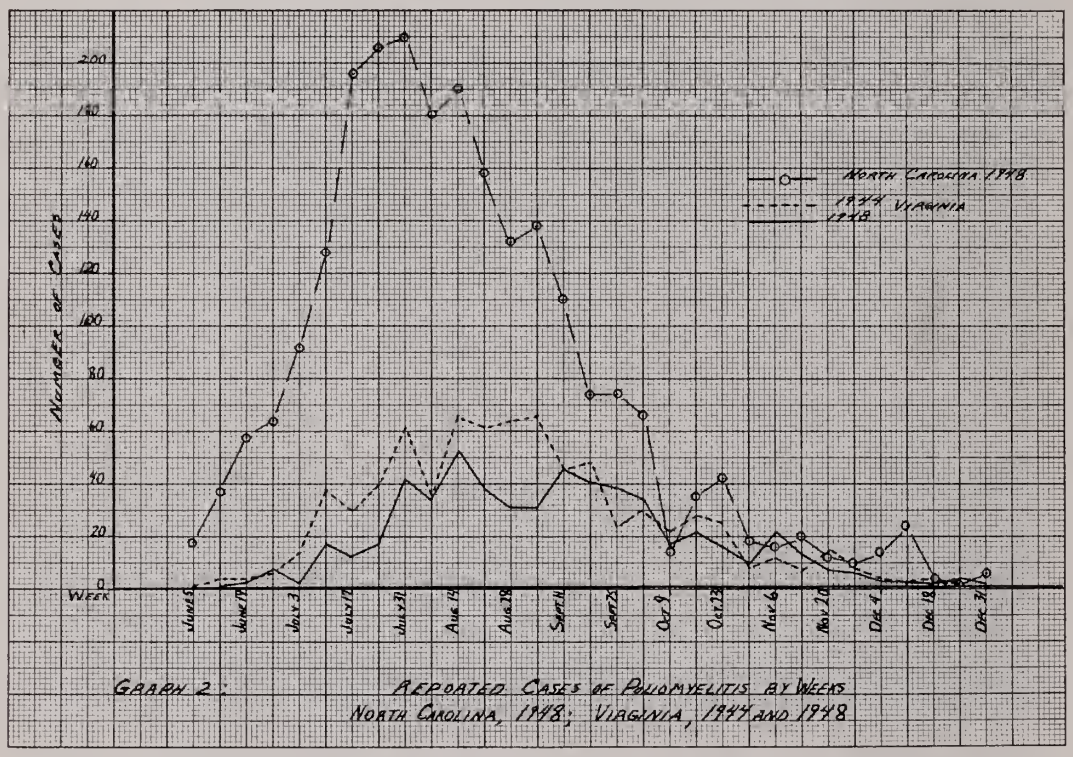
the pattern of former years, we may expect a higher than average incidence in 1949, as occurred in other years following high peak years, namely, 1917, 1924, 1930, 1941 and 1945. 1936 was an exception year.

Contemplation of the Incidence Graph showing high incidence years recurring with a certain pattern of regularity, and the succeeding hold-over years, leads to the strong impression that epidemics of poliomyelitis, like measles, occur when a sufficient number of non-immune susceptibles accumulates.

the succeeding weeks. No confirmation has been forthcoming for theories of higher incidence in wet or dry summers. Unanswered still is the question: What happens in summer in temporate zones to increase the dissemination of virus among susceptibles?

Distribution.—In comparing the poliomyelitis picture in Virginia in 1944 with that of 1948, there is a striking contrast in distribution of cases as shown in Graph 3.

The number of cases surveyed in 1944 was 826, in 1948—567. As will be seen from the Spot Map (Graph 3) the majority of cases in 1944 occurred in



Seasonal Incidence.—The seasonal incidence of poliomyelitis is one of the intriguing and unexplained features of the disease. The pattern repeats itself with regularity. July and August are the peak months; then, with occasional flare-ups, there is a gradual decline to December.

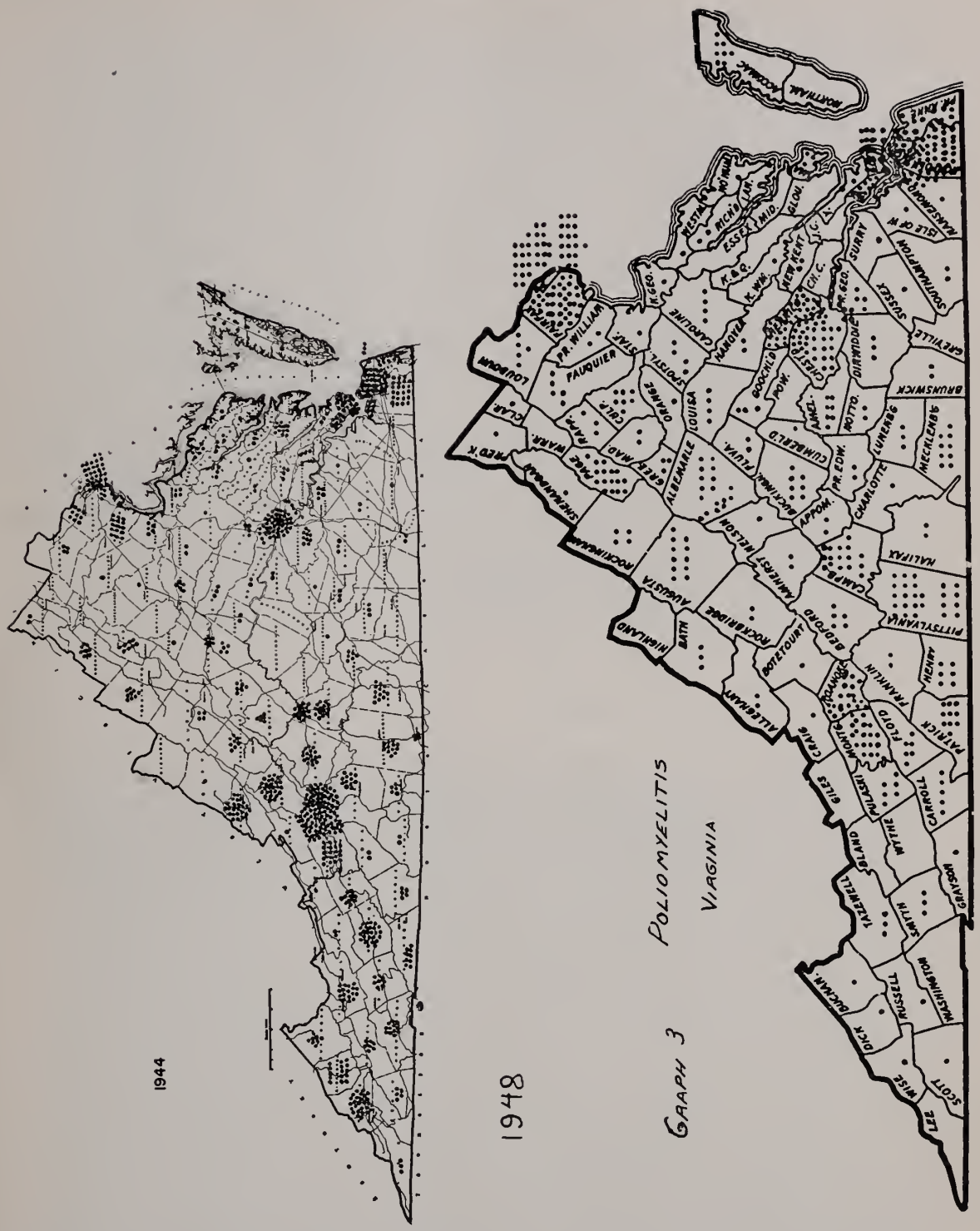
The regularity of this seasonal pattern is demonstrated in Graph 2 showing poliomyelitis in Virginia in 1944 and 1948, and in North Carolina in 1948.

It is of interest that reports for two week-ends, August 7th and October 9th, show all three incidence curves making an abrupt drop to rise again

Southwest Virginia with accumulation in the Roanoke-Lynchburg District, while in 1948 the Eastern part of the State was hardest hit, with accumulation of cases in the Arlington-Alexandria-Richmond and the Norfolk-Newport News areas.

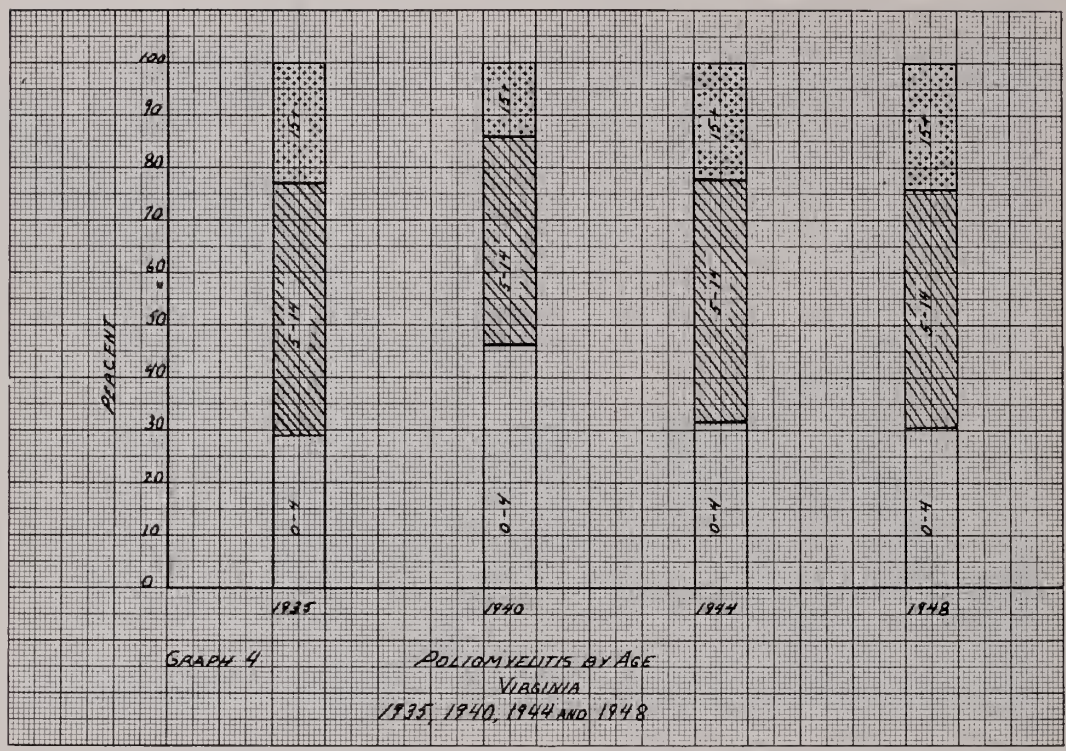
This is quite apparent if we draw a perpendicular just west of the Richmond area. This shift in distribution would tend to confirm the theory of higher incidence in areas not hard hit during the previous epidemic year and therefore having a larger number of susceptibles.

Another interesting relationship or lack of relationship is evident from inspection of the Spot Map.



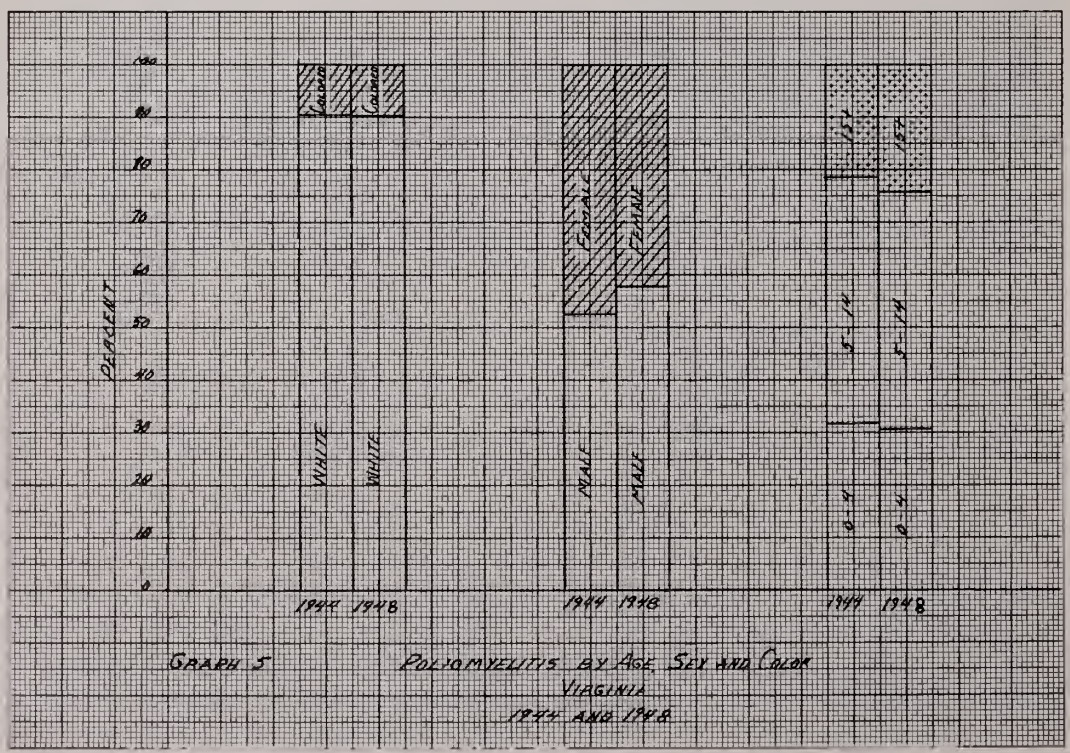
In each year the early cases were reported in counties on the North Carolina-Virginia border. Assuming that the wave spread up from North Carolina, it is surprising how relatively few total cases there were both in 1944 and 1948 in most of the Virginia counties touching the North Carolina border.

Age Incidence.—That there has been a significant increase in the occurrence of clinical poliomyelitis in older age groups is evident by the unconscious way in which many of the public and the medical



profession in the past few decades have dropped the use of the term Infantile Paralysis. The trend of this shift of age group incidence in Virginia is demonstrated in Graph 4.

From inspection of this Graph it is seen that there has been a larger percentage of cases in the



15-and-over age group in 1948 than in 1944.

Race and Sex Incidence.—The predominance of males over females reported in epidemic years, and of white over colored, is confirmed by the experience of Virginia in 1944 and 1948.

This is shown in Graph 5.

In 1944 the ratio of males to females was 52.5% to 47.5%. In 1948 this ratio was males 57.8% and females 42.2%. The ratio of white to colored was much more striking. In 1944 it was white 90.5% to colored 9.5% and in 1948 it was white 90.4% to colored 9.6%. In 1947 in Virginia the colored race comprised 22.7% of the population. The persistence of this relationship in epidemic after epidemic removes it from the realm of chance and brings up again the biochemical question: Why?

Multiple Infections in Single Families.—In 1948 there were five instances of two cases of poliomyelitis in a single family and one instance of three cases in a family.

MORTALITY

Of total cases (826) studied in 1944, 66 or 8.0% died. Of the total cases (567) reported in 1948, 32 or 5.6% died. While not statistically significant, it is of interest that in 1944 the fatality rate for males was higher in every age group than it was for females, while in 1948 the same rate relationship occurred except in the 10-19 age group, where the fatality rate among females was higher than among males. Again we run across a persistently recurring feature of clinical poliomyelitis—not only a higher attack rate among males, but also a higher fatality rate. The fatality rate by age is shown in the following table:

POLIOMYELITIS FATALITY RATES BY AGE
1944-1948

	Cases		Deaths		Fatality Rate	
Age Group	1944	1948	1944	1948	1944	1948
0-4	254	172	14	7	5.5	4.1
5-14	380	257	33	8	8.7	3.1
15+	172	137	19	17	11.0	12.3
Total	806	566	66	32	8.0	5.6
Age Unknown	20	1				

Outcome.—In 1944, of the 760 who survived, 560 were seen one year later and their condition noted. The results were as follows:

65% (362) had recovered completely
14% (79) had slight paralysis
13% (75) moderate (braces) not totally disabled
8% (44) severe (bed, crutches, braces).

Outcome results for 1948 were obtained by a series of questionnaires sent to local and city health officers. Since 1948 cases were not followed for as long a period as 1944 ones, results are not fairly comparable except as regards severe, or those having disabling paralysis. As compared to the 8% listed as severe in 1944, there were 3.7% with disabling paralysis in 1948. In respect to mortality and disabling paralysis it would appear that the 1948 epidemic was less severe than the 1944.

Hospitalization.—In 1944 every case of poliomyelitis was given the opportunity to be hospitalized at no expense to the patient unless the family wished to help. The State paid the hospital bills and the National Foundation for Infantile Paralysis paid the ambulance fees and the board and salaries of special nurses. Of the 826 cases studied, 680 or 82% are known to have been hospitalized. In 1948, of the 567 cases reported, 502 or 88.5% had hospital care. We would like to pay tribute to the National Foundation for Infantile Paralysis which performed a splendid service to Virginia in paying all hospital expenses, with families of patients making contributions as desired.

The 502 poliomyelitis patients were cared for in the following hospitals:

Medical College of Virginia Hospital, Richmond, Va. (White and colored).
Maryview Hospital, Portsmouth, Va. (White).
Henry Wise Hospital, Norfolk, Va. (White).
Roanoke Hospital, Roanoke, Va. (White).
Clinch Valley Hospital, Richlands, Va. (White—very few cases).
Gallinger Hospital, Washington, D. C. (White—over 12 years).
Childrens' Hospital, Washington, D. C. (White—under 12 years).
Woodrow Wilson Hospital, Fisherville, Va.
Lee Memorial Hospital, Norfolk, Va. (25 beds).

QUESTIONS

And now, in conclusion, a few observations on current epidemiological thinking in regard to poliomyelitis.

In his article on Poliomyelitis in Rivers' Viral and Rickettsial Infections of Man, Howard A. Howe, of the Poliomyelitis Research Center of Johns Hopkins University, describes poliomyelitis as "a common virus disease which usually runs a mild course characterized by upper respiratory or gastro-intestinal symptoms, but occasionally the pic-

ture is complicated by signs indicating invasion of the Central Nervous System."

So widespread, in his opinion, is its occurrence that Howe estimates that during an epidemic there well may be 100 non-paralytic and abortive cases to one paralytic.

This concept of the common occurrence of poliomyelitis is advanced by Hart Van Riper, Medical Director of the National Foundation for Infantile Paralysis, who states "it is now clear that the majority of us become infected at some time during life with the virus of poliomyelitis. The clinical disease and the infection are not the same thing. The disease is rather an exceptional result of the infection."

The acceptance of the theory that the virus of poliomyelitis is so widespread that contact for all is sooner or later inevitable, puts it in the category of childhood diseases like mumps, measles and chickenpox, and makes most of our present attempts at control seem feeble and inadequate.

Lacking an effective immunizing agent, one possible key to control will be the acquisition of knowledge as to why the majority of persons in contact with the virus are unscathed while the minority suffer from clinical disease. In essence, this is a problem of biochemistry yet to be solved. When this biochemical mystery is unravelled we may know the answers to some of these unsolved problems of the epidemiology of poliomyelitis:

1. What happens in summer in temporate zones to increase dissemination of virus among susceptibles?

2. Why are epidemics more evident in countries with high sanitary developments and facilities?

3. Why do more males show evidence of disease than females?

4. Is it a delusion that the strong and healthy show clinical disease oftener than the delicate and puny?

5. Why nine times as many whites as colored in Virginia in 1944 and 1948?

6. What is the role played by chilling, overexertion and fatigue in making infection manifest as clinical disease? (In experiments with monkeys it has been demonstrated that excessive chilling and exercise increase susceptibility).

7. What role is played by heat, light, and salt depletion?

8. What factors make clinical disease result in paralysis?

Virus Studies.—In regard to routes of entry and exit of the virus it has been rather generally agreed that the route of entry has been through the oropharynx and that the virus leaves by the oropharynx and lower intestinal tract. In recent work at Stanford, Faber and his associates have expressed doubt that the gastro-intestinal tract is the usual site for the proliferation of poliomyelitis virus. When virus was enclosed in gelatin capsules and introduced by curved cannulae into the stomachs of 26 monkeys, none contracted poliomyelitis. Sabin and Wood had found that the same virus administered by simple feeding which involved simultaneous exposure of both pharyngeal and gastro-intestinal surfaces induced infection in 40% of the monkeys. Faber's results suggest that the gastro-intestinal as compared to the oropharyngeal surfaces is relatively impervious to virus. In each of the capsule fed animals virus appeared in stools during and after feeding periods but disappeared shortly. No conclusive evidence has been produced so far to incriminate animal or insect vectors as playing a primary role in the spread of poliomyelitis.

From observation and experimental work it appears that virus multiplies in the human body, but not outside, as far as we know. It can, however, survive outside the human body for long periods.

SUMMARY

1. The high incidence of poliomyelitis in Virginia has occurred with a fairly regular pattern in interval years.

2. The seasonal pattern is well established.

3. In both 1944 and 1948 the established experience of higher incidence of male over female and of white over colored has been maintained.

4. In 1948 there was a slight increase in the attack rate in the 15-and-over age group.

5. In 1948 there were multiple cases in six families, two cases in five families and three cases in one family.

6. As evidenced by lower fatality rate and less severe residual effects, the 1948 experience was milder than that of 1944.

7. The final control of poliomyelitis depends, in our opinion, upon the production of an effective immunizing agent.

Acknowledgment for valuable assistance in the preparation of this material is made to:
Jane C. Budwell, *Statistician*
Mary Q. Hughes, *Secretary*

DISCUSSION

DR. E. M. HOLMES, JR., Richmond: Dr. McCown is to be complimented on his interesting summary of the occurrence of the Virginia Poliomyelitis Outbreak in 1948 and its pattern in previous years. He has given us much to think about both from the standpoint of local happenings, and about the disease in general.

In discussing distribution by color, the statement was made, "the ratio of whites to colored was much more striking. In 1944 it was—whites 90.5 to colored 9.5, and in 1948 it was white 90.4 to colored 9.6." I would like to clarify this point as it may be misleading. It is true that 90.5 per cent of the cases were white and 9.5 per cent colored in the 1948 outbreak. Of the 567 cases in the State, 511 were white, 54 colored and 2 unknown. Using the 1940 census figures the total white rate for the State was 25.35 per 100,000, while the colored rate was 8.16 per 100,000, thus the crude ratio of colored and white based on specific attack rate is 1 to 3. The question arises—is color of as much importance epidemiologically, as socio-economic levels? It is generally admitted that poliomyelitis attacks all social levels, but unlike meningococcic meningitis it does not especially attack the population of slum areas or crowded and densely populated areas. A further question arises—does crowding give greater immunity? Is color or race as important a factor as economic status?

It would be interesting to see not only the geographic distribution of cases in the 1944 and 1948 outbreak on a spot-map, but to have specific attack rates for all areas of the State on a population basis. Richmond's attack rate was only 13.44 per 100,000, roughly one-half of the overall State rate. What would be specific attack rates for the Lynchburg-Roanoke-Christianburg area, the Norfolk-Portsmouth-Newport News area and the Alexandria-Arlington area, if such were obtainable? While these areas are most heavily spotted on a map, they are also densely populated, thus the question arises—was the eastern part of the State hardest hit, or does it only seem so? From the spot-map, graph 3, it is my impression that the 1944 and the 1948 outbreaks were not confined to as limited a geographic area, or as clearly defined an area as was the 1935 epidemic, which involved chiefly the mid-section of the State.

Another thought on the recurring high incidence of poliomyelitis is the incidence due to a simple increase in the numbers of non-immune persons in the populations as in measles, or is the increase of type II or Brunhilide Strain over the commoner type I or Lansing Strain an additional factor to be considered?

Floral Eponym
Dodecatheon Meadia
RICHARD MEAD, 1673-1754

MEAD was the most celebrated London physician in Queen Anne's time. He inherited from Radcliffe the celebrated gold headed cane as well as Radcliffe's practice. Dr. Johnson said of him that he "lived more in the broad sunshine of life than almost any man."

Dodecatheons are beautiful North American wild flowers of about thirty species. They are perennial, essentially stemless herbs. D. meadia, named for Dr. Mead, is native from Pennsylvania to Texas. Its common name is shooting star or prairie pointer.

THE PRESENT STATUS OF ELECTROENCEPHALOGRAPHY AND ITS IMPORTANCE IN THE GENERAL PRACTICE OF MEDICINE†

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Richmond, Virginia.

Electroencephalography has come of age. Although it is not yet completely mature and stabilized it is no longer merely the experimental procedure that was previously available only in a few large research centers. It is today a necessary component of the laboratory armamentarium of any progressive and modern general hospital or clinic. In this brief report I shall not attempt to review or discuss the electrophysiological basis of electroencephalography or the fundamental considerations of the basic technique or equipment. These aspects have been presented in many papers in the literature[1,2]. My purpose in this report is to present some of the new advances in the use of electroencephalography and what appears to me to be its present status especially as related to its practical use in the general practice of medicine.

Up until very recently the shortage of adequate equipment and well trained electroencephalographers and technicians prevented any but the largest medical centers from having adequate facilities for electroencephalography. At present, however, there are five or six companies in the United States manufacturing EEG equipment. Of these, at least three companies (Grass, Medcraft and Offner) are producing equipment which conforms with the specifications of the American Electroencephalographic Society and have proven adequate in both research and clinical laboratories. Although there is still a shortage of well trained electroencephalographers, the number of technicians has increased considerably in the past few years.

The interest in electroencephalography is world wide. At the International Electroencephalographic Congress which was held in Paris September 1-5, 1949, and in which I had the privilege and pleasure of participating, there were representatives from all over the world. The centers of greatest activity seems to be England, France and the United States. During the past year, an international journal, "*The EEG Journal*", has been launched. It is devoted exclusively to electroencephalography and clinical neurophysiology.

The need for and the interest in electroencephalography is attested to by its rapid growth in a comparatively short period of time. Although there was experimentation earlier[3], for practical purposes, the use of the human electroencephalography began with Hans Berger, a German psychiatrist in 1929[4]. It was not, however, until later with the work of Adrian, Matthews[5] and Walter[6,7], in England; Gibbs, Davis, Lennox[8], Williams[9], and Lindsley[10], in the United States, and Jasper[11,12] in Canada that the great interest and research in electroencephalography was established. Phenomenal progress has been made in the past ten years.

Although much of the early clinical work was done in the localization of cerebral lesions[6,7,9] and the diagnosis of epilepsy[8], there was hope among many organically minded psychiatrists that this new procedure might be of help in psychiatric diagnosis. There was thus a plethora of communications of the EEG findings in functional mental illnesses. Because of the inadequacies of technique and equipment, much of the abnormalities reported were either misinterpretations or technical artifacts. Because of this initial discouragement, the pendulum of interest swung away from study of psychiatric illnesses to the study of organic superficially located cerebral lesions. Indeed, for many years, most workers emphasized the value of electroencephalography only in epilepsies and in lesions of the cerebral cortex. Today, with the use of basal and tympanic leads, subcortical electrodes and newer methods of activation, more and more workers are returning to the study by EEG of functional and psychiatric conditions[13].

The discussion of newer techniques can be conveniently divided into those techniques by which more of the brain has been made accessible to recording and those methods which help to accentuate or reveal latent electroencephalographic abnormalities. For the first group, it is quite obvious that the more electrodes that are used and the more simulta-

*From the Electroencephalographic and Neurodiagnostic Laboratories, 2502 Monument Avenue, Richmond, Virginia.

†Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

neous recordings are made, the greater will be the possibility for the detection and localization of abnormalities. In most laboratories today, from 16 to 24 scalp, ear and basal electrodes are placed and the activity is recorded with 6 to 8 ink writing oscillographs. It seems safe to predict that in a very short time, 12 channel equipment will be routine. One of the most significant advances in making accessible more of the brain is the use of easily placed nasopharyngeal and tympanic electrodes. A simple technique was described by MacLean, Arellano and Schwab[14]. The pharyngeal and tympanic electrodes together with those on the ear lobes provide a series of six electrodes across the base of the brain. The pharyngeal electrodes when properly placed lie about 2 cm. from the uncinate part of the hippocampal gyrus (figure 1 and figure 2). The tympanic electrodes lie 0.5 to 0.75 cm. from the inferior surface of the temporal lobe in the region embracing the inferior temporal and fusiform gyri. These electrodes thus make it possible to detect and localize abnormal electrical activity arising in these regions and are hence helpful in localizing tumors and other pathology at the base of the brain.

Fig. 1. Lateral skull X-ray, showing naso-pharyngeal and tympanic electrodes in place (MacLean, Arellano and Schwab technique).

Electrocorticography or the recording by means of electrodes placed on the exposed cortex has been used for several years in a few neurosurgical research centers. This procedure is now finding greater acceptance in more neurosurgical operating rooms as an aid in the localization and removal of epileptogenic foci. With the use of the human stereotaxic apparatus for the placement of special subcortical electrodes[15] and the placement of electrodes into more deeply located structures such as the thalamus[16,17], both by open and closed methods, the entire brain has been made accessible to recording. This has proven of great help not only experimentally, but for practical diagnostic purposes. The use of electroretinography[18,19] by several workers promises to increase the understanding of cerebral functions and perhaps will have diagnostic value.

Activation methods are procedures that are used for accentuating and eliciting latent abnormalities that do not appear in the routine resting and awake recording. The most frequently used of these methods are sleep[19A] (natural or induced), rhythmic or intermittent photic stimulation[20,21,25,26] and chemical

Fig. 2. AP skull X-ray, showing nasopharyngeal and tympanic electrodes in place. (MacLean, Arellano and Schwab technique).

activation by the use of such drugs as intravenous metrazol[22] or strychnine[23]. Sleep recordings have become a routine procedure in many laboratories, and have not only been helpful in increasing the diagnostic aid of the EEG in the epilepsies[19A], but have also proven important in the localization of cerebral tumors and other organic lesions of the brain[24].

Intermittent photic stimulation or the use of a flickering light at various frequencies is being used widely in France[25] and England[21] and to an increasingly larger extent in this country as a form of physical activation of the electroencephalogram. Walter[21] recently reported the findings of specific clinical and electrical abnormalities in 65% of a group of suspected epileptic patients whose resting and overbreathing records were either normal or non-specific. Some very fascinating possibilities have been reported in the use of this technique in cases that have a purely psychiatric and non-epileptic history.

Although the activation of the EEG by means of metrazol and strychnine for the localization of foci in focal epilepsy has been used for some time, this method is now being used as an aid for the localization of other organic lesions of the brain.

To the average physician, a practical consideration is the relative value of the electroencephalogram as an aid in the diagnosis and treatment of a specific patient. He would like to know in which conditions the EEG is most helpful, and in which conditions the EEG abnormalities correlate best with specific clinical abnormalities and pathological findings in the brain. It is perhaps important to emphasize here that although the EEG findings may be specific from the standpoint of localization, nevertheless, when taken alone, are non-specific from the standpoint of pathological correlation. This lack of specificity, however, is not unique for the EEG, but is true for many laboratory procedures. It is certainly true for many x-ray and EKG findings. On the other hand, when the EEG findings are properly considered with the total clinical picture, history, physical and neurological findings, etc., their specificity increases so that the correlation with pathological findings may be quite high. There have been many attempts among workers to correlate specific patterns of cortical electrical activity with certain clinical syndromes of epilepsy. These attempts have proven in vain with the exception of the 3 per second spike and wave complexes. These complexes when occurring symmetrically in the two hemispheres are generally accepted as an invariable accompaniment of a syndrome clinically known as "petit mal". There are many workers, however, who even doubt this specificity.

To the physician requesting an EEG examination, it is important to reemphasize that the relative value of the EEG examination is directly proportional to the thoroughness of the technique, the number and type of electrodes used, the number of channels used simultaneously, the length of the recording and the skill and experience of the electroencephalographer in the interpretation of the record. One or two negative examinations taken with only eight electrodes with a recording of twenty minutes or less is no longer considered even presumptive evidence of the absence of EEG abnormalities. This is especially true if the clinical pictures point to possible cerebral abnormalities.

TABLE 1
THE CONDITIONS IN WHICH EEG STUDIES HAVE PROVEN MOST VALUABLE
(List in decreasing order of importance)

	EEG USED FOR:
1. THE EPILEPSIES	a. Diagnosis b. Management
2. HEAD INJURIES	a. Localization of Injury b. Evaluation of extent of damage
3. EXPANDING INTRACRANIAL LESIONS	a. Localization b. Diagnosis ?
4. CEREBRO-VASCULAR LESIONS	a. Localization—Early b. Diagnosis ?
5. OTHER CEREBRAL LESIONS (DIFFUSE, INFECTIOUS, TOXIC, DEGENERATIVE)	a. Localization ? b. Diagnosis ?
6. ORGANIC PSYCHIATRIC CONDITIONS	a. Localization ?

CONDITIONS IN WHICH THE EEG IS OF QUESTIONABLE VALUE AT PRESENT

1. BEHAVIOUR DISORDERS
2. METABOLIC DISORDERS
3. PSYCHOSOMATIC CONDITIONS
4. THE NEUROSES AND FUNCTIONAL PSYCHOSES

In Table 1 are listed in their relative order of importance, the conditions in which the EEG studies have proven the most valuable. The table is ob-

viously incomplete, and is open to much justifiable criticism depending upon one's own experience. It is also true that as research progresses and more information is available many of the conditions listed at the bottom of the table may prove to have more important EEG correlations. The recent increased interest in EEG recordings from the temporal lobes and from the thalamic and hypothalamic structures will certainly increase the usefulness of electroencephalography in psychiatric conditions.

Table 1 indicates that the most important use of electroencephalography is in the diagnosis and management of the epilepsies, both symptomatic and idiopathic (cryptogenic of genetic). Most of the recent studies reveal that the electroencephalogram will show some form of abnormality in 90-95% of epileptic patients if a sufficiently thorough examination is carried out. In about 15% of the cases, the abnormality may not be sufficiently clear even with hyperventilation to permit a definite diagnosis, but by the use of activation methods or by recording shortly following or during an attack, the abnormalities will be evident. It is important to reiterate that in spite of the very high percentage of EEG abnormalities in epileptic patients, the diagnosis of epilepsy should not be made on the EEG alone, but must be adequately corroborated by clinical seizures or their equivalents. On the other hand, to diagnose and treat epileptic patients today without EEG studies represents real negligence in the management of the patients. A preliminary pilot study recently of physicians treating epileptics reveals that the majority of these patients are being treated in Virginia by the general practitioners, and that only a very small percentage of these patients have had EEG studies. This is as true in the larger cities as it is in the more remote rural districts. Although the EEG facilities in Virginia are still inadequate, there are, nevertheless, enough laboratories to make it possible for all patients in or near the larger cities to have such studies done. It is to be hoped that very soon even the general hospitals in the smaller cities will have adequate facilities.

The most recent classification of the epilepsies in order of special reference to neurosurgery with asso-

TABLE 2
CLASSIFICATION OF THE EPILEPSIES (JASPER)
(In order of special reference to neurosurgery)

	EEG FINDINGS
1. FOCAL CORTICAL	
a) SUPERFICIAL CORTICAL CONVEXITY	Random spikes, localized unilateral. Relatively normal activity from other head regions.
b) BURIED CORTICAL FOCI	Random sharp waves, 2-6 per sec. Paroxysmal rhythms more diffuse unilateral or bilateral from homologous areas of the two hemispheres. Background rhythms relatively normal from other areas.
2. DIFFUSE CORTICAL, MULTIPLE FOCI	Random slow and sharp waves, occasional rhythmic sequences. Considerable independence of two hemispheres. Little or no normal activity in background.
3. FOCAL SUB-CORTICAL	Various forms of projected disturbance, usually rhythmic sharp and slow waves, usually bilaterally synchronous from homologous areas. Background activity often disturbed periodically.
4. IDIOPATHIC EPILEPSY (ALSO PRINCIPALLY FOCAL SUB-CORTICAL).	
a) PETIT MAL	Bilaterally synchronous spike and wave at 3 per second. Relatively normal activity between attacks.
b) GRAND MAL	Often same as for petit mal between attacks but with more prominent spike components. May also show diffuse "fast" or "multiple spike" activity in paroxysms.
c) MYOCLONIC	Bilaterally synchronous multiple spike and slow wave discharges maximum over frontal lobes occurring in short paroxysms not regularly repeated in rhythmic sequence.

ciated EEG findings is given by Jasper[27] and is shown in Table 2. It is interesting to note the absence of the so called psychomotor epilepsy from the idiopathic group and the suggestion that the idiopathic epilepsies are principally focal sub-cortical. Recent experimental evidence suggests a diencephalic focal origin for the idiopathic epilepsies[27]. The necessity for differentiating by adequate EEG studies the symptomatic from the idiopathic epilepsies has been brought out recently by my personal experience with several patients who were referred for neurological evaluation because of the persistence of their seizures in spite of anticonvulsant medication. All of these patients were diagnosed as idiopathic epileptics on the basis of "routine" electroencephalograms taken in other cities. In our laboratory multiple electrode placement with a metrazol activation technique revealed a definite focus in two of three patients who were subsequently operated upon by neurosurgeons. In one patient the removal of an epileptogenic cicatrix and in the other the removal of an atrophic gyrus resulted in relief from convulsive phenomena.

Serial electroencephalography should be a routine procedure in all head injury cases regardless of the severity of the injury. These studies can have important medico-legal value and often may be used prognostically. In general it may be stated that when EEG abnormalities persist longer than 10 days, it is likely that the cerebral injury has been more that a simple concussion. When a focus of delta waves with spontaneous rapid activity becomes organized two to three months following a local cortical contusion or lacerating wound, the development of post-traumatic seizures becomes probable. Most workers[27,28,29,30] feel that the severity of the head injuries and the amount of generalized abnormality in the EEG run parallel. EEG findings, however, are not a reliable guide to the diagnosis of subdural hematoma. In less than 50 per cent of the cases it is possible to demonstrate an area of relative electrical silence between two closely spaced electrodes placed over the center of the hematoma[27].

The percentage of cases of expanding intracranial lesions (tumors and abscesses) in which correct localization can be made by the EEG ranges from 70 to 85 per cent in various reported series of cases[31,32]. It is interesting to note that tumors themselves are electroencephalographic inactive, but reveals their presence by their effects on the surrounding or distant areas of the brain. Although at present electroencephalography cannot be substituted for air studies, such studies should certainly be used as a preliminary and adjunctive examination. Electrocortiography has proven helpful in localizing small tumors for surgical removal. With more of the brain becoming accessible to recording electrodes by the newer techniques, it might be that in the near future EEG studies will replace air studies.

In the literature to date there have been very few studies[33,34] in large series of cases evaluating the reliability of the EEG in cerebro-vascular lesions. The value of the EEG is increased by recording as soon as possible after the onset of the illness and by serial examinations. A recent study by Zfass and Hoefer[34] of the EEG findings in a large series of cases of cerebro-vascular lesions seen at the N.Y. Neurological Institute from 1940 to 1948 indicates that focal findings begin to disappear after three weeks in most cases and persist longest in cases of cerebral embolism. It is possible with early and serial recordings to offer some aid in the differential diagnosis between cerebral thrombosis, cerebral hemorrhage and cerebral embolism. Similarly the differentiation between neoplastic and vascular lesions can be made by the regressive changes in the latter.

SUMMARY

1. A brief report of the present status of electroencephalography has been presented.

2. It has been pointed out that electroencephalography is no longer merely an experimental procedure, and that the electroencephalographic laboratory is a useful and necessary component of any modern general hospital.

3. Some of the newer techniques of recording and activation have been discussed.

4. An attempt has been made to present the indications for electroencephalography in their order of importance.

5. Jasper's new EEG classification of the epilepsies in order of special reference to neurosurgery is presented.

6. Emphasis has been placed on the necessity and importance of more adequate EEG studies in the differential diagnosis and management of the epilepsies. Since the majority of patients with epilepsy are treated by the general practitioner, it is necessary

that the general practitioner be adequately informed of the role of electroencephalography.

7. It is only by the continuous cooperation between the general practitioner, the various specialists, electroencephalographers, and research investigators that this new electrophysiological procedure will continue to grow in importance and become more adequately evaluated and standardized.

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DISCUSSION

DR. J. B. FUNKHOUSER, Richmond: In his paper, Dr. Zfass has spoken of the usefulness of electroencephalography in general practice, and I would like to add that specialists also find much usefulness in the EEG.

The electroencephalogram provides a most reliable means of making a diagnosis of obscure types of epilepsy. Epilepsy can masquerade as almost any condition. Rare forms of epilepsy therefore usually end up in various specialists offices. Since EEG may give evidence of brain damage when all other tests or signs fail, it very frequently furnishes valuable information to the neurologist and neurosurgeons studying convulsions or brain tumor, as well as to the psychiatrists. The pediatrician, studying a behavior problem with ictal features; the internist, studying encephalitis, cerebro-vascular disease, fainting and dizzy spells, gastric migraine or hysteria; the endocrinologist, curious about hypoglycemia; all may receive help from the EEG. The orthopedic surgeon with a case of cerebral palsy; the industrial surgeon who has a head injury case; the urologist with certain types of enuresis; the obstetrician with an eclamptic—these specialists too may wish to consider a laboratory test for epilepsy. Both the ophthalmologist who has a patient with impaired vision or extra-ocular movements, and the otologist who has a patient with impaired hearing, or with Meniere's disease, have in some instances, found help from the EEG.

Post-anesthetic cerebral complications and the complications resulting from irradiation to cerebral structures bring anesthesiology and radiology into the sphere of EEG.

It is not my wish to infer that all patients who have had one of these symptoms or conditions should be rushed off post-haste to an electroencephalographer, but I would like to emphasize that almost any recurrent symptom suggests the rare possibility of epilepsy and therefore the specialist as well as the general practitioner will find more and more application for the EEG.

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This work contains the first description of premature separation of the normally implanted placenta. The author called it accidental hemorrhage in contra-distinction to hemorrhage from placenta previa.

Rigby received his medical education in London and practiced in Norwich. He is not to be confused with his son, Edward Rigby (1804-1860), who wrote an excellent text book on midwifery.

PSYCHIATRIC ASPECTS OF SURGERY WITH SPECIAL REFERENCE TO POST-OPERATIVE PSYCHIC SHOCK*

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INTRODUCTION

Specialists in every branch of medicine are becoming aware of the fact that their endeavors can be much more fruitful if the patient and his lesion are united so as to bring into focus the person as a complete entity. Somewhat belatedly surgery is finding it is no exception and that this stereopticon third dimension, if wanting, can invalidate any phase of therapy from history to discharge. There are not many people who are capable of complete detachment and objectivity towards their malady, as the vast majority display inconsistencies between effect and ideation and incongruities between the severity of the disease and the depth of the symptomatology. These discrepancies often are so puzzling and enigmatic that they are not only confusing but threaten the welfare of the patient. A few of the infinite complexities created by psychic factors and the attitude of the surgeon toward them are the concern of this discussion. Shock can and does occur even though an injury or operative procedure is not extensive enough to bring about this untoward event. No explanation has been made of why shock should follow less traumatic procedures before the patient has fully recovered from the anesthetic. It is my opinion that this type of shock has a psychic basis and is just as neurogenic in origin as that which occurs in the conscious person.

From the diagnostic standpoint emphasis at present is placed upon the detection of disorders with a socalled functional background that similate organic diseases. The obverse of this picture is not so obvious. The discovery of a malign surgical illness through a cloud of irrelevant material is incumbent upon the surgeon. It is just as important to provide necessary surgery or medical therapy under these conditions as it is to prevent such treatment when it might be ill-advised, futile or even detrimental.

The fact that a person can have two independent diseases, one of which is a menace to life but is obscured by another of longer standing, was forcibly impressed upon me during the closing days of my internship. In a heated discussion between a urologist and a surgeon, the former accused the latter of removing appendices indiscriminately without properly investigating the genito-urinary tract. After two patients, who had been admitted to the hospital with a fully confirmed diagnosis of ureteral stone, had passed away from acute appendicitis the urologist lost some of his assuredness, and his attitude towards the omniscience of his implements was thoroughly softened. Apparently man was something more than the sum total of all his parts.

An analogous situation, and one much more frequently encountered, is found in the inflexible and inaccessible psychoneurotic who finally sustains a true organic disorder. Many unjustified aspersions have been cast and able clinicians bitterly condemned because of the failure to discover a disease in time to avert a fatality. Such a constellation of symptoms and signs is irritating and baffling and the utmost care is necessary if the bright stars that can dispel the mystery are to be revealed through the overcast of the neurosis. Unusual measures sometimes are needed, such as the suggestion of Rubinstein[10] who emphasizes the value of hypnosis, not only as a therapeutic measure but also as a diagnostic aid when confronted with the problem of the known neurotic who might also have a genuine organic disease. He observes, however, that one must be cautious not to accept too literally the verbally or acted-out productions of the patient as they are too likely to be displacements, condensations, or distortions resulting from the psychic economics of the dream state. Often explanations of a patient are merely rationalizations which can be resolved only by suitable analytical study directed at discovering the underlying personality defect from which they stem.

The conception that there are people who will deliberately seek an illness and gain a certain satisfaction from being hospitalized and operated upon is almost impossible for the laity to understand, and, until recently, for the medical profession to comprehend. A great many "battle scarred abdomens" bear testimony to this fact. This is particularly true in gynecology since so many women

*Presented before the Staff of the Petersburg Hospital on June 10, 1948.

take this means of escape from unpleasant and sometimes impossible domestic situations. It is not too much to say that psychiatry should be almost as important a part of gynecology as the histo-pathology of the endometrium. Unconscious, psychodynamic forces that repudiate logical assumptions are incorporated in diseases amenable to surgery and their implications deserve much more attention than they are now receiving.

The protean nature of the somatic response to psychic stimuli complicates surgical diagnosis to such an extent that Beck[1] pleads for more tolerance for those who at times have been unable to detect the true state of affairs. It should be generally realized that organic pathology may produce psychic disturbances and functional disease can cause organic pathology. It follows that both are present simultaneously to a varying degree.

Although psychic phenomena usually are not included in surgery, the experienced surgeon will hesitate to operate, unless a definite emergency exists, when the patient has announced he will not survive. Fact and not superstition or fancy compels him to pause and reflect whether he would prefer a live patient with a disease or a dead one without the imperfection. The will to die is not a myth, and in the aged is a force potent enough to be reckoned with. Injury to the personality arising from a lengthy illness frequently hampers and prolongs the convalescence and not uncommonly affects the result. Only too familiar is the patient who has repeated operations and accepts all of them gladly, which indicates they served to satisfy some personality need. I have one patient in whom the upper right quadrant had been explored three times after the gall bladder had been removed. She was unimproved until psychotherapy was instituted; certainly a flagrant example of diagnostic failure by a nationally prominent surgeon.

The generally accepted notion that surgical conditions are not intimately connected with psychodynamic mechanisms is now being challenged. Blanton and Kirk,[2] after an intensive study of the psychiatric aspects of 61 appendectomy cases, conclude that in 40% of their patients psychotherapy was a valuable adjunct for a complete cure, and that pre-operative as well as post-operative treatment was an essential for some. Included were cases of fulminating appendicitis. One patient had a ruptured appendix, but even after it was removed the attacks continued and he was not completely relieved.

Keyes, Bookhammer, and Kaplan[6] point to the necessity of a more dynamic participation of psychiatry in the general hospital and conclude that a psychiatric ward service within the framework of these institutions is timely, practical and economical. A preview of psychiatric consultations in the Jefferson Hospital (Phila.) indicates there is a wide variety of psychogenic illnesses, which require more than a consultation service to treat effectively, that exist in conjunction with organic disease. Billings,[7] in his discussion, said: "What with the obvious shortage of psychiatrists and with our realization that after all real mental hygiene and the definitive therapy of early cases of personality disorders are in the province of the general practitioner, internist, and surgeon, we must, through such developments just described and by practical demonstration reveal to our conferees the fallacy of neuropsychiatric diagnosis by exclusion and the waiting for a neurosis or psychosis to exist before the patient is understood and treated as a person as a whole."

Post-Operative Psychic Shock

Conventional thinking deals with the effects of psychic tension only at the level of consciousness, yet it is possible that the consequences may become manifest at a lower stratum. Three of these four cases illustrate just one small and minute phase of the whole problem—that it is possible for the pre-operative mental condition to produce shock post-operatively even before the patient has recovered from the anesthetic. This experience is certainly not rare, but is commonly unrecognized and generally dismissed as an unfortunate episode. The basic background denoting as imminent personality disorder comprises too much material to permit its presentation here, and will be limited to the immediate pre- and post-operative state. There is a tendency to view patients with these characteristics with some levity and their full import is not appreciated until tragedy strikes.

Case 1. Mrs. A. S. Y. had been suffering with upper abdominal discomfort for three years before she finally consulted her physician. X-ray studies disclosed a sluggish gall bladder with stones and operation was advised. She immediately became highly agitated and was confined to her bed with a

so-called nervous breakdown. After a later attack she consulted another physician who had similar studies made with the same outcome. For two years she temporized until virtually forced into the hospital by her relatives. During my examination she was calm and apparently reconciled to the operation scheduled for the following morning, but a sudden "cold" caused postponement for a day. At operation the gall bladder and appendix were removed with little difficulty and her blood pressure, pulse and respiration were unchanged at the conclusion. Forty minutes after her return from the operating room the blood pressure dropped from 130/70 to 60/30, she suddenly stopped breathing and became cold, clammy and pulseless although by stethoscope the pulse rate of 84 was unchanged. Caffeine, coramine and intravenous medication were administered, but the most effective measures were dermal stimulation by pinching and pressure under the sub-orbital ridge which induced natural breathing. Her blood pressure and respiration did not become normal until five hours later.

This patient had an inadequate personality and a severe anxiety neurosis. As she was the center of constant attention and solicitude the illness served the useful purpose of palliating her narcissism and insecurity. Her convalescence was prolonged and every device to postpone her ultimate recovery as much as possible was exploited. From the total point of view I do not consider the operation a success and, as there was no emergency, good surgical judgment would have postponed the operation long enough to permit psychotherapy.

Case 2. Mrs. G. A. M., age 57, was referred to me for severe discomfort in the lower abdomen with pain radiating from a point just medial to an old right rectus scar through which appendectomy had been done several years before. Examination revealed moderate tenderness in the area and the suggestion of a mass. By pelvic examination the lower surface of this mass could be discerned high up in the right fornix, but it was not too distinct. Operation was advised and despite the protestations of her referring physician and myself that we did not believe this mass to be a cancer, that thought became firmly fixed in her mind. She was an extremely egocentric individual, possessive and dominating, with a rapid and continuous stream of speech, and was so obviously excited that the date for the operation was left, as it were, floating in air. A few weeks later the time for it was fixed, but was postponed because of a domestic upheaval. Finally the arrangements were made but her admission to the hospital was delayed as a private room of just the right type was unavailable. The disturbance she created during the assignment of her accommodations should have been warning enough of the events to come. The operation finally was performed and through a midline incision the mass was found to be a large collection of omentum adherent to the lower end of the previous incision. This was resected easily and the abdomen closed. Her post-operative blood pressure was 170/104—just about what it was before she went to the operating room. Thirty minutes after returning to her bed the respiration became shallow, pulse hardly perceptible and her skin cold and wet. She received the same treatment as the first patient, but it was nearly an hour before her blood pressure rose to 138/100 and six hours was required for it to reach the pre-operative level. From then on her post-operative course was uneventful and as far as I know she has made a good recovery and has no localized distress, but her egocentricity and emotional hypertension have not abated. She persists in the belief that the truth has been withheld and that she still is seriously ill.

Case 3. Mrs. L. S., age 35, consulted me for discomfort in her right side and on examination a tender cystic right ovary was easily found and operation advised. At once she became panicky and nearly fainted in my office. I was at a loss to understand her alarm as she was usually a stable, mature individual and had had a previous uneventful appendectomy. Despite the consolation of her husband and my reassurances she left the office in tears. Then began a series of consultations between the husband, the patient and myself, and during one of these when she was by herself I undertook to find the reason for her unusual fears. This was unavailing but the operation was finally scheduled and performed. The cyst was easily dissected from the ovary and, in accordance with a technic I have described elsewhere,[8] the remainder of that organ was explored, releasing several other follicles. The patient returned to her room in excellent condition with practically her pre-operative blood pressure of 120/70. Thirty-five minutes later she went into shock and her pressure fell to 68/40 with depressed shallow respiration and the

other usual signs. Similar treatment was administered and I did not consider her out of shock until an hour and thirty minutes later. Psychiatric probing later disclosed that she had established an extra-marital relationship and was afraid that her indiscretions would be discovered during the operation and communicated to her husband—an obvious example of illogical thinking due to the confusion arising out of ambivalence and guilt.

Case 4. Mr. I. C. M., age 67, had retired from business because of hypertension and mild attacks of angina pectoris. He was referred to me for a rectal condition that had been present over a year. He was quite uncomfortable and the lesion was draining an irritating discharge. Examination disclosed an infected anal duct just to the right of the posterior commissure. He refused operation at first because he was convinced his heart would not stand the strain, but when I informed him that it would be done under local anesthesia he agreed to have it performed, but still with much trepidation and foreboding. The infected duct was easily excised and posterior sphincterotomy done. He returned to his bed practically unaffected. A few minutes later, before the anesthetic had been absorbed, I was summoned hastily and found him to be in shock. The blood pressure had fallen from 190/110 to 86/60, his breathing was shallow and the skin cold and wet. Stimulants were quickly administered, but it was several hours before he returned to what was for him a normal condition. Because of his age, his vascular and emotional tension and some degree of arterio-sclerosis a fatality could easily have occurred. This patient should have had better preoperative psychic preparation for a man of his age and fixed mentality, probably in the form of freer inter-personal association and a closer rapport to allay his fears and apprehensions.

The first two operations were done under gas-oxygen-ether anesthesia, the third with sodium pentothal and in the final one procaine was used. Reactions following the operations were essentially the same, hence I feel that the type of anesthesia had little to do with the subsequent events except the time element, since in the conscious patient the shock took place much more rapidly.

CAUSE OF SHOCK

Psychic shock is a common phenomenon. Physicians often have to contend with it during minor procedures which ordinarily should not produce preliminary excitement or have any aftermath or repercussion. The sight of blood, the stick of a needle or occasionally the mere mention of the necessity for an insignificant examination or diagnostic process can cause the typical sequence of events usually labelled as "passing out" or fainting. In reality this is psychic shock. The picture is extremely familiar. First there is a feeling of weakness, then a loss of muscle tonicity and equilibrium. The skin becomes cold, sweaty and pale and when unconsciousness occurs the eyes are rolled upward or are divergent. Occasionally tremors are present and vomiting is not unusual. The whole syndrome lasts but a short time, and when recovery is attained the pulse is full and bounding, the skin flushed and the feeling of weakness and loss of muscle tone gradually disappear. It has little significance except that pertaining to the psyche and does no harm unless an injury occurs when the equilibrium is lost.

There is much speculation on the causes of neurogenic shock. My own theory is that it is a flight from reality during emotional hypertension and is activated by a precipitating event. That we see in our offices may be due to the inability to withstand what the organism considers an attack upon a more jealously guarded soma, and considers any mark upon it as an affront. Then again there may be the mental trauma incidental to sudden apprehension or that which is violently opposed to preconceived ideas. Syncope associated with disaster or catastrophe is of the same nature but has a larger hysterical component.

Moon[9] states that the reasons for bewilderment as to the causes of shock are not far to seek. Conditions due to a combination of causes are not suitable for analysis. He offers this illustration:

Let X symbolize the effects of primary or neurogenic shock.

Let Y symbolize the effects of hemorrhages or hemorrhagic shock.

Let Z symbolize the effects of capillary damage or toxemic factor.

Then X plus Y plus Z equals traumatic shock as manifested clinically.

To propose conclusions as to the cause of traumatic shock upon data from cases of traumatic injuries, he states, is as unsafe as to propose the solution of a single equation containing three indeterminate variables. The procession of events en-

suing after the onset of shock and the effects of these variables do not come into this discussion.

As for the four cases presented, the cause of shock can hardly be found anywhere except in the psyche. During the convalescence the lack of further complications demonstrated the absence of other mishaps. The procedures were done quickly and accomplished easily and there was little in them to produce any such reaction. They were not extensive and hemorrhage and trauma were slight. It did seem in those patients who received a general anesthetic that the shock took place when they were leaving the unconscious mental level and entering the subconscious because it occurred just about fifty minutes after the anesthetic had been discontinued and there was a response to dermal stimuli. The shock did not disappear until full consciousness and cerebral reorganization had been attained. If that be true, it is quite possible that the ego could not withstand the disposal of a series of reactions to which it already had become adjusted and the shock was a manifestation of resistance to what amounted to an assault by a wholly new group of unknown and perhaps precarious conditions. For this predicament the patient may have been totally unprepared and could not summon the mental sufficiency to cope with it successfully. Prior to the operation feeling and emotional tension had reached an intensity from which a sharp decline was unavoidable and needed but little to upset the integration of the organism. As Hart[5] points out, "patients with psychosomatic illness cannot immediately undertake total remedial treatment, cannot afford to entertain seriously plans that jeopardize their protective compromise with reality and unwittingly threaten them with a more fearful danger to personality adjustment." Surgical operations are for the most part "total remedial treatment" which might be much more successful if the psychic components of the malady could be properly evaluated and managed.

COMMENT

One of the complaints of surgeons, accustomed to deal with tangibles, is the looseness of terms and vagueness of ideas expressed by psychiatrists, and they approach this unsubstantial vocabulary with diffidence, resistance, and even ridicule. Yet these nebulous factors become realities enough when the cloak of mystery they bear covers an illness that might yield to the scalpel, cause unexpected complications or prevent a cure. Although no one is capable of complete emotional emancipation there is still a broad separation between those who organically are comparatively unaffected during stress and the neurotics with somatic projections arising from exorbitant emotional tension. The latter frequently require surgery but the diagnosis is often complicated by symbolic discomforts. Every means for identifying these syndromes should be available to the surgeon and he cannot always leave their recognition to others who more than likely have little or no experience with surgical pathology nor the aptitude or opportunity for obtaining any through immediate observation. The subjective components of an illness may require just as much or even more study than any other phase of the case and it would be more advantageous to have this aspect evaluated by those who are familiar with the concrete manifestations of disease. The whole picture could then be integrated with every element properly interpreted and in correct perspective. Thus the distortions incidental to the limited spheres of the restricted specialist might be avoided. Attainment of the ability to appraise personality need not be confined to the psychiatrist since abundant clinical material is available to everyone.

Confronted with the same psychic problems as anyone who limits his practice to specific fields, how then is the surgeon to detect when they have a role in the illness he is concerned with? According to Hart their effects can be measured in medical conditions by resistances the patient demonstrates in his attitudes, free association, and in specific behavior. Such patterns apply just as well to surgical diseases as I have shown by these four cases. Some of the resistances he graphically describes are: procrastination in seeking medical attention, self treatment, sabotage of treatment, broken appointments, medical shopping, limitation of treatment, patronage of cults, vagueness and evasiveness, circumstantiality, complacency, relief afforded by physical defect, fear of personality study, denial of conflict, misleading explanations, and acceptance of previously ineffective remedies.

There is one large class he does not mention. This is composed of people who have a penchant for pessimism and the faculty for uncovering the unfavorable and unhappy facets of any situation. They possess good mental ability and often have a

high intellectual level, but lead an existence punctuated by minor but magnified calamities. When motivated falsely by their deep-rooted basic insecurity the result in such individuals is a persistent state of aggression and psychic energy that cannot be released and from which there is no relaxation. Their susceptibility is betrayed by their speech, sleeping characteristics and emotional lability. Constant dread, apprehension and anxiety keeps them in a state of alarm bordering on panic which impairs their judgment and creates a resistance that corresponds occasionally almost to actual hostility. If one is able to break through their psychic defenses and reach the nucleus of the disturbance, an emotional outburst accompanied by a flood of tears usually will indicate the presence and the source of inner tension no matter how tranquil or phlegmatic the outer calm seems to be.

These complexes are much simpler to delineate than to recognize but with experience and persistence they become increasingly but not always obviously clear. Much depends upon the talent and the inclination of those attempting it. Medicine has long been considered both an art and a science. The greatest artists since the time of Pythagoras and Aristotle were men who either by instinct or direction paid more attention to the mental aspects of illness. Until comparatively recently these apparently exogenous items were not subjected to careful scrutiny although they were known to exist. But the disciplines of science now have brought what formerly were considered trivia into the light of being important factors in disease. The salient characteristics of many non-surgical diseases were found to consist of psychic components and thus the term psychosomatic medicine came into existence. Surgical conditions too are affected by the neuroses. In fact they are to be found in the diseases comprising any branch of medicine.

As a rule surgical defects can be detected much more easily than those of the personality. But the effects of personality factors in surgery cannot be ignored, for it is not enough to do an operation with the expectation that the result from it will be all that should be needed to rehabilitate the patient. Nor can one be content with the thought that the patient has acquired something else after the surgery is completed. If a personality disorder is present one cannot expect that the healing of an associated surgical lesion will mean the re-integration of the individual. Hence if a person is a ne'er-do-well and blames his inability to work on a hernia, repairing the hernia will not cure the tendency to dependence.

Should these extraneous factors be of concern to the surgeon or shall he consider his relationship with the patient to be completed after the immediate objectives have been reached? If he assumes this attitude and retires behind the glamorous facade of the operating room, he descends to the level of a mere technician and persons as such no longer interest him. While no one can encompass the entire field of medicine, as long as personal associations exist, more than abstract awareness of mental mechanisms is required. Unlike the pathologist and similar specialists who for the most part do not come in contact with patients, the surgeon cannot become completely detached and by aloofness relegate his all important rapport with the patient to others. That rapport usually expressed in such terms as faith, confidence or respect and admiration is more often than not an essential factor in the cure. To achieve the most complete results surgery alone cannot meet all the requirements. Gynecology is an especially fertile field since with women at the mercy of their hormones not only is psychiatry important, but endocrinology as well.

There are many who disagree with such reasoning, holding that surgery is complicated enough without the addition of more burdens. Rationalizations of this nature certainly were not accepted by the masters and intellectual giants of this or any other day, as almost without exception they devoted themselves to keeping their interests, activities and cultural pattern as liberal and expansive as their extensive and scholarly genius could devour. To go to the other extreme, if one should limit his efforts to operating on just one disease, for example, hernias, gall bladders, thyroids or peptic ulcers, undoubtedly the operation itself would be done with more expedition; but in the last two conditions, particularly in the latter, an unreasonable rate of recurrence would nullify the operating efficiency promoted by such a restriction. Crile demonstrated long ago that the degree of excitement has a direct bearing on the post-operative morbidity and mortality in thyroidectomy, since physical and emotional relaxation must be attained to prevent aggravation or renewal of the lesion. Of particular value to the neural surgeon would be an accurate method of dif-

ferential diagnosis between hysterical manifestations and organic lesions.

Surgeons differ in their methods of practice. A limited but necessary few in large centers where the cases are available undertake the study and development of an extremely complex and difficult technic applicable to an uncommon condition. They are usually uncommon men who make immense contributions that go far beyond their original intention. There are some who rarely see a patient before operation and almost never go near one afterwards, confining their work to the operating room. And there are others who, because they consider the patient as an entity, follow the admonition of Crile[3] that "Above all, it must be borne in mind that no detail is too petty for the surgeon himself"; and heed his penetrating observation that: "Any agency that can sufficiently inspire faith, dispel worry—whether that agency be mystical, human or divine—will at once stop the body wide stimulations and inhibitions which cause lesions that are as truly physical as a fracture."[4]

I do not contend that the surgeon should be a complete psychiatrist. There is such a thing as compromise and happy medium, but certainly his vocabulary should not be limited to worry, nervousness, distress, upset, trouble and the like. The conclusion of Weiss[11] is most pertinent: "In his HISTORY OF MEDICINE Garrison states that the fundamental error of medieval medical science, as originally pointed out by Guy deChauliac and elucidated by Allbutt, was in the divorce of medicine from surgery. He might have added that the fundamental error of modern medical science has been in the divorce of both from psychiatry."

SUMMARY

A whole host of manifestations arising out of the neuroses are commonly encountered in surgery. These have been considered unfortunate and at times disagreeable and vexatious intrusions into surgical problems. They certainly have not been appreciated adequately and are now being examined in the light of a new philosophical approach. Instead of being neglected or dismissed from the elaborate ostentation of surgery they should be included as one of its vital and essential constituents. Surgery no more than medicine, roentgenology, dermatology, allergy, or any other branch in which the personal relationship is necessary can be separated from the intangible but real effects of the psyche. These effects can act as etiological agents, obscure the diagnosis, affect the pre-operative and post-operative state, precipitate complications, interfere with the convalescence and even prevent a complete cure. And in the operating room there is hardly any question that the patient who comes there calm and confident is a much better risk than the tense, anxious individual whose opposition to the anesthetic is marked by rapid breathing, retching and lack of laryngeal relaxation. Such circumstances may make a turmoil of the whole procedure and be a poor omen for an uneventful convalescence.

Four cases of what has been interpreted as post-operative psychic shock have been presented for the purpose of demonstrating that behavior patterns, faulty and damaging attitudes, and the emotional tension of a patient can have a direct influence on the convalescence and ultimate results in surgery.

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18 Liberty Street.

RECURRING PULMONARY INFECTION FROM INTERMITTENT PARTIAL INFLAMMATORY BRONCHIAL OBSTRUCTION—

Report of a Case

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Recurring attacks of acute pulmonary infection frequently result from intermittent partial bronchial obstruction. Whenever recurring attacks of so-called pneumonia involve the same area of a lung, localized bronchial obstruction should be considered as the most likely cause of the illness.

Obstruction may result from tumor or foreign body, but more often reduction in the lumen of the bronchus is caused by inflammatory reaction. The most frequent site of infection is in a posterior or postero-lateral division of the major bronchus to the lower lobe of either lung. Often this bronchus is normally quite small and because of the position, size and angle of the bronchial division, drainage is easily impeded.

Fig. 1. Normal appearance of bronchi that are filled with iodized oil.

Patients who have chronic asthmatic bronchitis are particularly susceptible to recurring attacks of fever with expectoration of purulent secretion and then spontaneous recovery following improved drainage. In almost all patients with this type of history, partial stenosis of a posterior or postero-lateral division of a lower lobe bronchus can be identified on bronchoscopic examination, and mechanical dilation of the bronchus aborts the acute febrile attack and frequently prevents recurrence of infection.

This condition not only is observed in patients who have attacks of bronchial spasm but may be encountered in many other persons who are otherwise normal. The following report is typical of many patients whom I have observed and treated.

Fig. 2. Sacculation and dilation of posterolateral division of bronchus to lower lobe of right lung.

REPORT OF CASE

A woman aged 43 was examined on July 18, 1947. She had been well until the age of 24, when pain developed in the right side of her thorax, with fever and cough that was productive of mucous secretion. She did not notice pus or blood in the material that was expectorated. The fever, pain and cough continued for about four weeks and then

she seemed to recover completely from her symptoms.

Afterward, however, almost every spring and autumn she had attacks of so-called pneumonia or bronchitis, always localized in the right lung. These attacks were associated with cough and fever as high as 105° F., and every attack since the first one was accompanied by expectoration of foul-smelling, bad-tasting, purulent sputum. Duration of the attacks was variable, but after drainage was accomplished, the patient recovered completely and again felt well.

The attack immediately prior to my examination occurred in April, 1947. Roentgenoscopic examination of the thorax at her home revealed some evidence of infiltration at the base of the right lung, but roentgenograms taken in an antero-posterior position after instillation of iodized oil did not show any evidence of bronchial abnormality.

Further roentgenoscopic studies at the Medical College of Virginia Hospital revealed a normal outline of the bronchi that were filled with iodized oil (Fig. 1). A roentgenogram taken in a lateral position, however, disclosed a triangular area in the right lung posteriorly that did not contain any oil.

Bronchoscopic examination under local anesthesia on July 19, 1947, revealed pus exuding from the postero-lateral division of the right lower lobe bronchus, and the bronchial lumen was exceedingly small. The bronchus was dilated first with an aspirating tube and then with a forceps, and 10 cc. of lipiodol were introduced directly into the bronchus distal to the area of stenosis. A roentgenogram showed considerable dilation of the bronchial lumen (Fig. 2).

The patient returned for re-examination on September 30, 1947, and bronchoscopic investigation at that time disclosed nothing abnormal. She felt quite well. At her most recent examination, April 1, 1949, she stated that she had not had any further respiratory difficulty, and her weight had increased from 140 to 161 pounds. Further bronchoscopic study was not made.

Today's Shoes Are Squeakless.

Grandfather's shoes squeaked, but they were not nearly so likely to cause skin disease as are the silent ones worn today, according to two Evansville (Ind.) dermatologists, Drs. L. Edward Gaul and G. B. Underwood.

Radical manufacturing changes that de-squeaked footwear also introduced many chemicals and synthetic materials. Modern footwear has become a chemical labyrinth, containing not a few hundred chemicals, but thousands, they point out in the November issue of *Archives of Dermatology and Syphilology*, published by the American Medical Association.

A reason for the high incidence of dermatitis [skin disease] related to footwear is apparent after a study of data on patch testing with different brands of shoe polish, shoe adhesive materials and materials used in fabrication of shoes. Many of the chemicals used in processing hides to convert them into leather may cause dermatitis. Recently, various anti-mildew and fungicidal chemicals have been added. Dermatitis from shoes seems to be related to excessive sweating. Women's footwear dictated by changing styles, colors and materials offered the greatest range of exposure, favored by the fashion of not wearing hose.

The skin eruptions also seemed to be more common in summer than in winter. The doctors reported 71 cases in the Evansville area during summer months of one year, and only 28 cases during the remaining seven months.

The doctors recommended that evaluation of irritating properties of materials used in manufacfacting shoes is needed so that the public can purchase shoes that conform to certain standards.

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

In this issue of the VIRGINIA MEDICAL MONTHLY we are beginning a new feature which we hope will be permanent; namely, a report on the clinicopathological exercises which are given by staff members of the Departments of Medicine of the Medical College of Virginia and the University of Virginia.

It is planned that about two-thirds of these case reports will be made up of general medical and general surgical cases, and the other one-third will be pediatric and general specialty cases. In this way we hope that the cases presented will be of such a nature that they will attract the widest possible interest.

Since this is a new experiment on our part, we invite your comment and criticism.

CLINICOPATHOLOGICAL REPORT

CASE NO.: B-44246

A 56 year old, white, married, automobile painter was referred to the Medical College of Virginia Hospital because of wheezing in his chest of one month's duration.

Approximately one month before admission, he developed a deep chest cold manifested by tightness, cough, wheezing, and expectoration of a thin mucoid material, which was occasionally blood tinged. Ten days before hospitalization, he developed chilly sensations, pain in the upper abdomen and chest, and the cough became more productive and the wheezing more pronounced. He was given oral penicillin for 3-4 days following which he developed anorexia, nausea, vomiting, and constipation. Accompanying this he began to experience severe occipital headache and some unsteadiness in walking. He had lost eight pounds in weight. Past history revealed that he had influenza in 1918, and since that time had mild asthma every fall and spring and a persistent chronic cough. Family history revealed that his mother died of carcinoma of the uterus, and his father of intestinal obstruction.

Physical examination showed a well developed and nourished middle-aged man lying quietly in bed, appearing somewhat apprehensive and discouraged. Temperature 98.8, pulse 88, respiration 22, and blood pressure 125/80. The pupils were round, regular and reacted to light and accommodation. The fundi were normal. The neck was normal with the trachea in the mid line. There was no lymphadenopathy. The chest was symmetrical and showed equal, but decreased, expansion. The breath sounds were distant with a decrease over the left lower lobe posteriorly where there were also a few fine post tussive rales and an occasional expiratory wheeze. The remainder of the examination was normal except that one observer thought the liver extended two centimeters below the right costal margin, but he was unable to feel the edge. The neurological examination showed: Sensory survey: Normal; Neuromuscular system: Normal except for staggering gait; Reflexes: Deep tendon, equal and active; positive Romberg with falling to the left, questionable Babinski. He was oriented.

The laboratory examination disclosed the following: Hemoglobin 11.5 grams, with 12,750 white cells, 91 per cent polymorphonuclear leucocytes, and 9 per cent lymphocytes. No urine analysis was reported. A spinal tap was done the day after admission with initial pressure of 280 mm. H20, 60 mg. protein and one lymphocyte. The spinal fluid sugar was 84 mg. per cent, and the chlorides were 694 per cent. X-ray films of the skull and sinuses were taken, and were reported normal except for slight haziness in the left ethmoid and right maxillary antrum. No x-ray films of the chest were taken at the Medical College of Virginia Hospital, but chest films taken elsewhere showed a density extending out from the left lower lobe bronchus, especially in the posterior branches. An endoscopic procedure performed on the second day was essentially negative. Preceding and following the operative procedure he complained bitterly of severe occipital headache which was not relieved by morphine, and was accompanied by nausea, vomiting and anorexia. Because of dizziness and ataxia, he suffered two falls without obvious ill effect. On the seventh hospital day he became progressively more drowsy, his temperature, which had been around 100 degrees, rose to 101, and he expired.

Discussion by Dr. Edward S. Ray.*

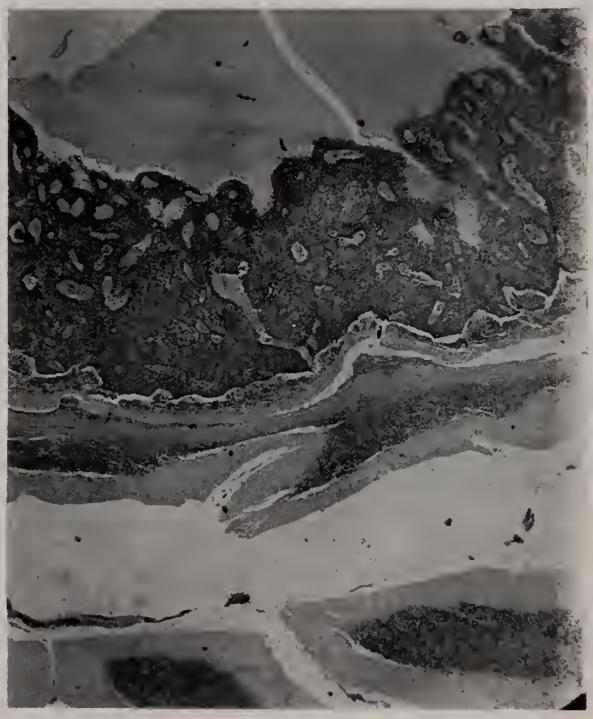
Case of a 56 year old white male who apparently was well until one month prior to admission to the hospital when he developed a wheeze and symptoms suggestive of a pulmonary infection. Ten days prior to admission there was an increase in his cough and

1. Low power microscopic view of bronchogenic lesion.

expectoration, and he was given oral penicillin. Also about ten days prior to admission, he began suffering from occipital headaches, nausea, vomiting and unsteadiness in walking. He had lost eight pounds in weight. Past history of interest was that following influenza in 1918 he had suffered attacks of asthma every spring and fall, and had had a persistent cough in between these attacks. Physical examination revealed distant breath sounds over the left lower lobe with a few medium moist rales and an expiratory wheeze. Neurological examination revealed a positive Romberg and a questionable Babinski. Laboratory studies showed a moderate anemia and slight leucocytosis. Spinal fluid was under increased pressure with a slightly elevated protein and a normal cell count. X-ray of the skull and nasal sinuses was essentially negative. Chest film revealed a density extending into the left lower lobe. Endoscopy was performed (and I assume it was a bronchoscopy), and no abnormality was noted. Headache, nausea, vomiting and ataxia became progressively worse, and he died on the seventh hospital day.

SUMMARY: A 56 year old white man with a one month history suggesting pulmonary infection with the physical signs of partial bronchial obstruction, and a ten day history of symptoms and signs suggestive of an intracranial lesion.

The problems as I view them are: First, to decide if we are dealing with one disease, and I believe we are; second, whether the lesion is inflammatory or neoplastic; and third, whether the lesion is primary in the brain or primary in the lung. Since primary infection or neoplasm of the brain metastasizes to the lung so rarely, I am dismissing this possibility. I believe the lesion is one primarily involving the lung with secondary involvement of the central nervous system.



2. Low power microscopic view of metastatic lesion in the left cerebellar hemisphere.

So, it seems to me that the real problem is to decide whether this lesion is inflammatory or neoplastic.

Of the inflammatory lesions one must consider bronchiectasis, especially in view of the past history

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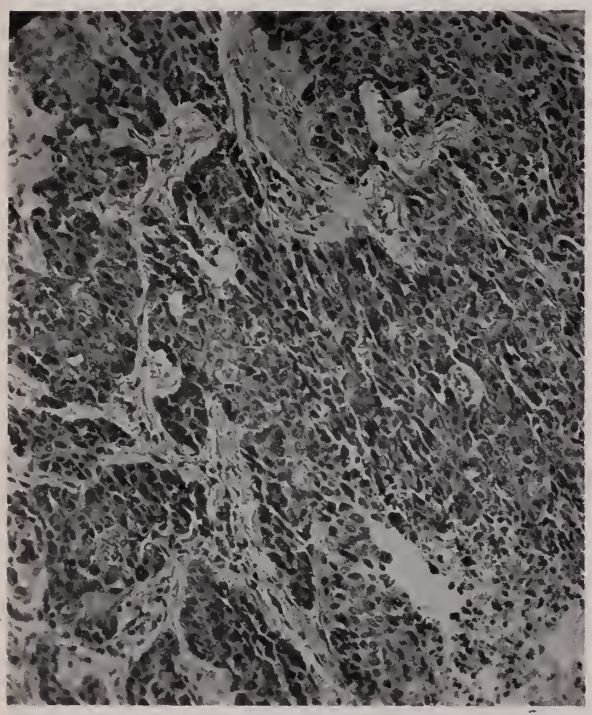
of recurrent pulmonary symptoms since influenza in 1918. The signs of bronchial obstruction could be due to bronchiectasis as the accumulation of pus within the involved bronchi will cause bronchial obstruction. The apparent segmental pulmonary involvement by x-ray is also compatible, since bronchiectasis is in most instances a segmental disease. Of all pulmonary infections bronchiectasis is probably the most frequently complicated by metastatic brain abscess.

Tuberculosis, of course, must be considered. Tuberculoma of the brain may occur with clinical findings of brain tumor and without evidence of meningitis although it is very unusual. When it does occur, it is usually in childhood or early adult life, since tuberculoma of the brain develops as the result of hematogenous seeding following the primary tuberculous lesion. The pulmonary lesion as described does not have the usual characteristics of tuberculous lesions, but basal tuberculosis gives an atypical x-ray picture and is compatible with this x-ray picture. In addition, basal tuberculosis is frequently secondary to a peribronchial lymph node eroding into a bronchus, which may give partial bronchial obstruction as noted here. However, from the statistical standpoint tuberculosis is so unlikely that I will also discard it as the probable diagnosis.



3. High power microscopic view of bronchogenic tumor.

Actinomycosis of the lung with cerebral metastasis is quite rare, and in addition there were no characteristics of this disease such as sinus formations.

Lung abscess frequently is complicated by cerebral metastatic abscesses, but the chest film and history do not suggest a lung abscess.

Finally, in regard to inflammatory lesions, metastatic brain abscesses from any type of infection are usually acute and apoplectic in onset with more fever than was present in this case, so I am inclined to dismiss inflammatory disease as the primary lesion in this case.

So we come finally to neoplasm as the cause of this patient's difficulty. A primary brain tumor as far as I know does not metastasize to the lungs; or, if it does, it must be one of the greatest rarities. Therefore, I believe the lung must be the primary site of the malignancy. Bronchogenic carcinoma frequently metastasizes to the brain—15% of the cases. The carcinomas that metastasize most frequently through the blood stream are the adenoca and the oat cell carcinoma. These also most frequently arise in the periphery or in the smaller bronchi of the lung; and, therefore, are not frequently visualized on bronchoscopy. Such a tumor arising in one of the segmented bronchi could cause partial obstruction with infection distal to the obstruction to give the clinical picture as described here, giving wheeze, cough, expectoration and fever. Or the lesion on x-ray, instead of being chiefly a pneumonitis distal to the obstruction, could actually be a carcinoma invading the lung parenchyma.

The ataxia and the positive Romberg point to a lesion of one of the cerebellar hemispheres, and such a lesion usually causes headache, nausea and vomiting.

Since the brain lesion is likely to be a metastasis through the blood stream, I believe that carcinoma cells were similarly carried to other organs of the body. The liver was questionably enlarged; and, since the liver is a frequent site of metastasis in carcinoma of the bronchus, I believe lesions will be found in this organ. It should be mentioned, however, that the vertebral veins frequently carry metastatic lesions to the brain, and this may have been the means by which the tumor cells reached the brain in this case.

Hospital diagnosis: Bronchogenic carcinoma with metastasis to the brain.

Dr. Ray's diagnosis: Bronchogenic carcinoma with metastasis to the brain and to liver.

Pathological report: Dr. Thomas M. Scotti*.

The left lung weighed 920 gm. There was almost complete stenosis of the left upper lobe bronchus. Its orifice measured approximately 1 x 5 mm. The bronchial wall was ulcerated and almost completely replaced by an irregular, hard, white tumor measuring 2.5 x 1 x 0.5 cm. The tumor involved the anterior branch of the upper division and the superior and inferior branches of the lower division of the left upper lobe bronchus. The remaining apical posterior segment of the upper division did not appear to be directly involved by the neoplasm. This tumor mass was continuous with a similar, hard white plaque of tumor tissue noted on the intermedial surface of the upper lobe at about the junction of the lower and middle third. This superficial mass measured approximately 3.5 cm. in diameter and 1 cm. in thickness. It apparently incorporated peribronchial lymph nodes which were replaced by tumor. Just distal to the point of obstruction of the anterior branch of the upper division of the upper lobe bronchus there was an abscess cavity measuring 3 cm. in diameter. The lower half of the upper lobe of the left lung was firm, consolidated and contained numerous small abscesses measuring about 2 mm. in diameter. The remainder of the left lung was similar in appearance to the right lung. The latter weighed 670 gm. There was some increase in firmness and decrease in crepitation. On section it was hyperemic and moderately pink, frothy fluid exuded from the cut surfaces. The pulmonary vessels were normal.

Numerous enlarged lymph nodes replaced by tumor and measuring up to 3 cm. in diameter were found around the trachea. A few enlarged nodes were noted along the course of the internal mammary vessels beneath the sternum at the level of the first rib on the left side. There was a single, slightly irregular, firm, white nodule in the liver measuring about 2.5 cm. in diameter.

The brain weighed 1,550 gm. There was moderate atherosclerotic change in the basal arteries. There was moderate flattening of the convolutions. The left cerebellar hemisphere was somewhat larger than the right. On section, a large cystic mass, filled with homogenous gelatinous material, was noted in the left cerebellar hemisphere. There was slight dilatation of the ventricular system. A marked pressure conus was noted in the brain stem (Illustrations 1, 2, and 3).

As to other organs there was generalized arteriosclerosis and slight nodular hyperplasia of the prostate.

Microscopically the tumor in the wall of the bronchus, in the lung, liver, lymph nodes and cerebellum was composed of sheets, groups and strands of abnormal epithelial cells. The cells were irregular in size and shape. The cytoplasm was pale or dark pink. The nuclei were irregular, and often hyperchromatic, with numerous mitoses. The cells resembled moderately, undifferentiated squamous epithelium.

Sections of lung showed congestion and edema; others disclosed bronchopneumonia and abscesses.

Pathological diagnoses:

1. Bronchogenic carcinoma, upper lobe of left lung, with metastases to tracheobronchial and substernal lymph nodes, liver and left cerebellar hemisphere.
2. Bronchopneumonia and abscesses of upper lobe of left lung.
3. Congestion and edema of right lung and lower lobe of left lung.
4. Cerebral edema.
5. Nodular hyperplasia of prostate, slight.
6. Generalized arteriosclerosis.

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MENTAL HEALTH

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Therapeutic Prevention of Mental Illness.

The Commonwealth of Virginia is taking a leading part in the field of preventive mental hygiene. Although the world-wide movement toward the recognition and early treatment of mental illness in outpatient clinics is still in its infancy, organized clinics for this purpose have been active in various localities in this State for many years. Among these early mental hygiene clinics may be mentioned the one operated under the sponsorship of the Kings Daughters in Norfolk. This clinic was active during 1918-1920 and was staffed by volunteer workers, including a psychiatrist, a neurologist, a psychologist, and a social worker. The present Mental Hygiene Center in Norfolk was established in 1923. The Memorial Guidance Center in Richmond has been active as a treatment clinic since 1924. Similarly the Children's Service Center at Charlottesville, the Fairfax County Child Guidance Clinic, and the Roanoke Guidance Center have been doing active work in therapeutic prevention of mental illness for several years. In 1939 the Southwestern State Hospital under the direction of the present Commissioner of Mental Hygiene and Hospitals, organized and operated mental hygiene clinics in the following places: Marion, Wytheville, Lebanon, Tazewell, Norton, Pulaski and Bristol. These clinics were primarily for service to discharged or furloughed patients from State hospitals; however, they were also available to the people of the community who needed psychiatric help in dealing with their serious mental and emotional difficulties. Unfortunately these particular clinics had to be discontinued at the beginning of World War II due to shortage of trained personnel.

The clinics which have been mentioned, among others, were either supported by private endowment, local donations, or State appropriations. In July of 1946 the National Mental Health Act was passed by the Congress and gave official recognition to the fact that mental health is a public health problem of first importance. The Commonwealth of Virginia was among the first to take advantage of the benefits of this Act. Following a detailed survey there was submitted in May, 1947, a complete statistical plan, budget, etc., to the U.S. Public Health Service, covering the program for the fiscal year 1947-48. Governor Tuck designated Commissioner Joseph E. Barrett as the Mental Health Authority for the State of Virginia. In January, 1948, the General Assembly appropriated the necessary matching funds. Immediate steps were taken by the Department of Mental Hygiene and Hospitals toward the establishment and organization of a state-wide system of clinics.

At the present time mental hygiene clinics under the direction of this Department are operating in the following places.

Alexandria	Norfolk
Arlington	Portsmouth
Charlottesville	Radford
Falls Church (Fairfax County)	Richmond (Three clinics)
Lynchburg	Roanoke
Newport News	Williamsburg

Each of these fourteen clinics serves a population area of about one hundred thousand. In order to supply clinic service to the entire State it will be necessary to establish a total of at least thirty clinics —these clinics to be located in strategic areas throughout the State. The location of the additional clinics has been planned but it will be necessary to await additional funds, and, above all, the availability of qualified professional personnel to staff these clinics.

Needless to say, our present clinics are far from idle. In the localities where they are now operating they have been enthusiastically received and supported. Patients come from many sources but it has been noted with great satisfaction the constantly increasing number of patients who are being referred to the clinics by their family physician. This is as it should be and this Department has made, and will continue to make, every effort to cooperate with the family physician in a total effort to prevent the continued increase of human incapacity resulting from mental illness.

Although preventive mental hygiene is concerned with preserving the mental health of healthy people,

in our State clinic program we must perforce be practical. Our mental hygiene clinics are medical activities and their main function is the study and treatment of individual patients. If more patients can be treated in the incipiency of their mental illness it may be that many of those may recover who otherwise would come to form a part of the growing number being admitted to our State hospitals. Such patients are all too frequently well advanced into the chronic phase of mental disease. We look forward to the day when, as our mental health clinics are able to care for more and more patients, we shall see a gradual reduction in the number of beds now being occupied in our State hospitals.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for November 1949 as compared with the same month in 1948, and for the period of January through November 1949 compared with the same period in 1948, is as follows:

	Nov. 1949	Nov. 1948	Jan.-Nov. 1949	Jan.-Nov. 1948
Typhoid and paratyphoid	14	6	144	126
Diarrhea and Dysentery	243	285	5,674	4,219
Measles	32	219	21,336	6,498
Scarlet fever	146	91	735	807
Diphtheria	38	37	176	229
Poliomyelitis	25	45	329	556
Meningitis	6	9	79	87
Brucellosis	7	1	68	74
Rocky Mountain spotted fever	0	0	101	64
Tularemia	2	3	30	50

PRELIMINARY ANALYSIS OF POLIOMYELITIS IN VIRGINIA, 1949

With the seasonal decline of reported cases of poliomyelitis we find ourselves looking back over the Virginia experience in 1949 and asking the question: Do we know anything more about the epidemiology of poliomyelitis than we did at the end of the 1948 experience? Our first observation is that the disease in 1949 has followed the pattern of former years as regards seasonal, race and sex incidence.

These relationships are shown in Table I.

The experience of 1949 has strengthened our belief in the hypothesis outlined by Gaylord Anderson that "poliomyelitis virus infection is as widespread as measles, that most of us respond well to the infection through the development of satisfactory resistance, but that a few are so constituted physiologically that they respond badly and are paralyzed". It is in the study of these physiologic variants that he feels we shall find our most fertile field of research.

TABLE I

POLIOMYELITIS IN VIRGINIA

Year	Total Cases	% Male	% Female	% White	% Colored	Median Age	Fatality Rate
1935	685	57.9	42.1	79.3	20.7	6.4	7.0
1940	241	61.0	39.0	90.9	9.1	5.8	10.8
1944	756	52.8	47.2	90.5	9.5	8.6	8.0
1948	567	57.7	42.3	90.5	9.5	8.5	5.6
1949*	332	59.6	40.4	92.2	7.8	8.9	4.0

Unanswered still are the questions of seasonal, sex and race incidence. A possible theory for a greater percentage of white over colored cases reported is that the disease probably occurs as often in colored as in white but because of economic factors colored cases are not as apt to be reported when in the subclinical and nonparalytic stage of the disease. No generally accepted explanation has been advanced for the repeated pattern of seasonal and sex incidence.

If poliomyelitis continues to follow the pattern of former years, then we should expect 1950 to be a year of relatively low incidence, indicating that the bulk of susceptibles have been used up in 1948 and 1949.

*January through December 7.

MEDICAL SOCIETY OF VIRGINIA
PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

The A. M. A. Meets in Washington.

The Clinical Session of the American Medical Association was held in Washington, D. C., December 6-9, 1949 with headquarters at the Statler Hotel.

One of the main issues discussed was that of socialized medicine. Dr. Elmer L. Henderson, President-elect of the American Medical Association, stated that the "fight may be won or lost in next year's Congress, or in the 1950 Congressional elections".

He warned against a feeling of false security over the victory won against Compulsory Health Insurance in the first session of the 81st Congress. This is the attitude the proponents of socialized medicine wish to prevail, but is one that must be guarded against.

Dr. Henderson offered that "American medicine, during 1949, became a well-organized, powerful fighting force for freedom". This was supported by Whitaker & Baxter (Public Relations firm employed in the National Educational campaign) in a report stating that "in ten months of the campaign, American medicine has won the active support of 1,829 national, state and local organizations".

Continuation of the Education campaign, led by the American Medical Association appears to be so important at this time that it was decided by the House of Delegates to ask each member for an assessment of $25 each. It is thought this may provide approximately $3,000,000.

Dr. Ernest E. Irons, of Chicago, President of the A. M. A. emphasized that the Truman Administration has not given up the fight as evidenced by the sending of Mr. Oscar Ewing and friends to study various systems of socialized medicine which have brought "confusion, inefficiency and exhorbitant expense".

It is believed that overwhelming public support in behalf of free-enterprise medicine will be decisive in a victory over the "socializers" in 1950.

Each doctor should play a vital part in educating the public to this end.

Doctor of the Year from Illinois.

Dr. Andy Hall, an eighty-four year old general practitioner and country doctor from Mount Vernon, Illinois, has been named "Doctor of the Year" by the American Medical Association.

Dr. Hall still keeps an eight-to-five office day and estimates that during his sixty years of service, he has been compensated by money for only sixty per cent of this practice.

When questioned about socialized medicine, Dr. Hall answered: "I think it's a bad thing for the countries that have adopted it, and I think it would be a bad thing for this country."

Unquestionably there are general practitioners in Virginia whose services merit this honor. Our efforts to bring their case to the attention of the House of Delegates of the American Medical Association will continue.

1950 General Assembly.

The General Assembly of Virginia will convene again the second week in January, 1950, and many matters of vital interest to the medical profession will be aired.

Of course, a number of matters concerning our health and medical care programs will be considered by that body. One of the foremost of these seems rather certain to be a question of improving the facilities and services of our mental institutions.

The request for placing two full-time professors of Public Health in each medical school in the state may be offered.

This office will endeavor to keep up with the deliberations of the Assembly, and it is hoped that each member of the medical society will be on the alert not only from the standpoint of the help that the medical profession can give, but from the standpoint of the assistance that may be solicited from members of the lay-public as the matters arise.

Committee on Reorganization.

A Committee on Reorganization of the administrative offices of the Medical Society of Virginia has

been appointed by Dr. W. C. Caudill, President of the Society.

The committee is composed of four members, with Dr. Vincent W. Archer of Charlottesville serving as chairman. Those serving with him are: Dr. John T. T. Hundley of Lynchburg, Dr. Walter A. Porter of Hillsville and Dr. Harry J. Warthen of Richmond.

Perhaps the deliberations of this committee would be passed on to you in the near future.

Public Relations Committee Meets.

Before this goes to press, the Public Relations Committee, which has been enlarged to a membership of six, will have met to discuss policies, procedures, programs and activities for the year.

The Education Campaign will be a matter to come up for discussion to be led by the State Education Chairman, Dr. John T. T. Hundley of Lynchburg.

Dr. J. M. Emmett, Clifton Forge, Chairman of the committee, and Dr. H. B. Mulholland of Charlottesville, will continue and have served on the committee since its beginning. New members appointed to the committee are: Dr. George A. Duncan, Norfolk, Dr. Andrew F. Gieson, Radford, Dr. John B. Leary, Arlington, and Dr. Benjamin W. Rawles, Jr., of Richmond.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President ..... MRS. C. E. HOLDERBY, Hilton Village
President-Elect ..... MRS. C. M. MCCOY, Norfolk
Recording Sec'y .. MRS. THOMAS S. CHALKLEY, Richmond
Corresponding Sec'y .. MRS. J. W. CARNEY, Newport News
Treasurer ..... MRS. KALFORD W. HOWARD, Portsmouth
Parliamentarian—
MRS. THOS. N. HUNNICUTT, JR., Newport News
Historian ..... MRS. M. H. HARRIS, West Point
Publicity ..... MRS. HERMAN FARBER, Petersburg

Minutes of the 27th Annual Convention.

The 27th annual meeting of the Woman's Auxiliary to the Medical Society of Virginia convened in the Fort Room of the Hotel Chamberlin at Old Point Comfort, at 9:00 A.M. on October 11, 1949, with the President, Mrs. R. M. Reynolds, presiding.

The invocation was given by Mrs. J. L. Jennings. Mrs. Thomas Hunnicutt gave the address of welcome, with the response by Mrs. M. W. Glover.

Mrs. Chester Bradley, chairman of arrangements gave the following report on registration: 76 members, 12 delegates, 1 alternate, and 71 guests, making a total of 160 persons.

The Memorial Service was conducted by Mrs. Lee S. Liggan for the following deceased members:

Mrs. O. G. Pearson, Warsaw
Mrs. Oscar Powell, Onancock
Mrs. Frank Poindexter, Newport News
Mrs. E. W. Buckingham, Newport News
Mrs. J. M. Saunders, Norfolk

The minutes of the 26th annual meeting were approved as read.

Roll was called by the secretary, with 16 officers, standing and special committee chairmen and county auxiliary presidents present. There was the following representation from the county auxiliaries: Northampton-Accomac 1, Richmond 6, Danville-Pittsylvania 2, Petersburg 1, Arlington 3, Alexandria 2, Northern Neck 2, Warwick County 5, and Norfolk County 7.

Mrs. David B. Allman, President of the Woman's Auxiliary to the American Medical Association was presented by the President, Mrs. Reynolds.

The 2nd Vice-President, Mrs. Engh, was asked to preside while Mrs. Reynolds gave her annual report. Mrs. McCoy moved that we accept the President's report for fine work with thanks. Motion carried.

Reports of the following officers were read: 2nd Vice-President, Mrs. O. A. Engh; 3rd Vice-President, Mrs. Lee S. Liggan; Recording Secretary, Mrs. T. S. Chalkley; Corresponding Secretary, Mrs. Charles Lupton; Parliamentarian, Mrs. H. W. Rogers; Historian, Mrs. M. H. Harris. The Treasurer's report showed a balance of $677.38 in the treasury.

Reports of the following Standing and Special Committees were given: Hygeia, Mrs. Preston Titus; Legislation, Mrs. Powell Williams; Publication, Mrs. Holland Trower; Public Relations, Mrs. Southgate Leigh, Jr.; Revisions, Mrs. J. E. Hamner; Cancer Control, Mrs. C. T. Pierce; Finance, Mrs. Paul Pearson; Leigh-Hodges-Wright, Mrs. Fletcher Wright, Sr.; and Nurse Recruitment, Mrs. Jessie W. Faris.

The reports of the county presidents were given as follows:

Northampton-Accomac, Mrs. W. J. Sturgis, Sr.; Richmond, Mrs. Edward Ray; Danville-Pittsylvania, Mrs. J. L. Jennings; Petersburg, Mrs. William Grossmann; Arlington, Mrs. J. Rollins McGriff; Alexandria, Mrs. Harrison Picot; Northern Neck, Mrs. A. B. Gravatt; Warwick County, Mrs. Chester D. Bradley; Norfolk County, Mrs. Mallory S. Andrews.

Mrs. Reynolds introduced the National President, Mrs. David B. Allman, who spoke on our duty in fighting compulsory health insurance.

The secretary read a telegram from Mrs. Joseph W. Kelso, President of the Woman's Auxiliary to the Southern Medical Association, expressing regret at being unable to attend the convention. The President announced that the Executive Board had sent a telegram in reply to Mrs. Kelso.

The report of the Council to the Woman's Auxiliary to the Southern Medical Association was given by Mrs. P. M. Chichester, who also read a paper prepared for the convention by Mrs. Joseph W. Kelso.

The report of the Annual Convention of the Woman's Auxiliary to the A. M. A. was read by Mrs. Mallory S. Andrews.

The secretary read the following recommendations from the Executive Board:

1). That the committee appointed for the President's pin go ahead with the final selection of the design and the purchase of the pin.

It was moved by Mrs. Hunnicutt that this recommendation be accepted. Motion carried.

2). That the State Auxiliary have a committee to investigate the facts regarding Senate Bill 1453, which has already passed, and House Bill 5940, which is pending passage, giving authority to a Federal Board to accredit or disaccredit Nursing Training Schools.

It was moved by Mrs. Howard that this recommendation be deferred until the last of the program. Motion carried.

3). That we reimburse the President to the amount of $8.62 for printing and postage expenditures for mailing sample resolutions.

It was moved by Mrs. Liggan that this recommendation be accepted. Motion carried.

Mrs. J. Rollins McGriff, chairman of the Committee on Resolutions read a resolution opposing Compulsory Health Insurance, and moved that the resolution be adopted. Motion carried. Mrs. McGriff also read a resolution supporting the A. M. A. 12-Point Program, and moved that this resolution be adopted. Motion carried. Mrs. McGriff then read the following Courtesy Resolutions:

WHEREAS, The Woman's Auxiliary to the Medical Society of Virginia, in convention assembled, has been the recipient of many courtesies;

THEREFORE BE IT RESOLVED, That the Medical Society of Virginia be thanked for their interest and cooperation in our work during the year and the courtesies extended during the twenty-seventh annual meeting of the Woman's Auxiliary to the Medical Society of Virginia.

RESOLVED, That the Woman's Auxiliary to the Medical Society of Virginia express its sincere appreciation to all of the following who have done so much to make this meeting a memorable occasion:

To the Woman's Auxiliary to the Warwick County Medical Society as hostess Auxiliary;

To Mrs. Chester D. Bradley as chairman, and her co-chairmen, for their work in planning the entertainment and arrangements for the meeting;

To Mrs. David B. Allman, President of the Woman's Auxiliary to the American Medical Association, for her inspirational message;

To the Management of the Chamberlin Hotel and its personnel for the many courteous attentions for our welfare;

To all those unidentified persons whose thoughtfulness has aided the perfection of detail which has made this occasion memorable; and especially we extend our thanks and appreciation to:

Our highly respected and esteemed President, Mrs. R. M. Reynolds, whose graciousness, capability, and loyal devotion to the interests of the Woman's Auxiliary have added so much to the unification and progress of the Auxiliary;

AND BE IT FURTHER RESOLVED, That a copy of this resolution be spread upon the minutes of the Auxiliary.

Mrs. McGriff moved that this resolution be adopted. Motion carried.

Mrs. McCoy made a motion to accept the recommendation of the Executive Board that the State Auxiliary have a committee to investigate the facts concerning Senate Bill 1453, which has already passed, and House Bill 5940, which is pending passage, giving authority to a Federal Board to accredit or disaccredit Nursing Training Schools. It was seconded by Mrs. Lupton. Mrs. McCoy then amended the motion, so that the committee be empowered to act immediately with the consent of the Advisory Board. Motion carried.

Mrs. Hamner presented the slate of officers as follows:

President ..... MRS. C. E. HOLDERBY
President-Elect ..... MRS. C. M. MCCOY
1st Vice-President ..... MRS. W. J. STURGIS
2nd Vice-President ..... MRS. T. J. MORAN
3rd Vice-President ..... MRS. M. W. GLOVER
Recording Secretary ..... MRS. THOMAS S. CHALKLEY
Corresponding Secretary ..... MRS. J. W. CARNEY
Treasurer ..... MRS. KALFORD W. HOWARD
Historian ..... MRS. M. H. HARRIS

Mrs. Leigh moved the nominations be closed. Motion carried. The slate was unanimously elected.

Mrs. Hamner made a motion that the secretary write Mrs. Simms a letter of appreciation for services rendered to the Auxiliary. Motion carried.

Mrs. Hamner moved that the secretary write a letter to Mrs. Latane, Mrs. Wright, and Mrs. DeCormis, expressing our regret at their absence. Motion carried.

The President turned the meeting over to Mrs. H. W. Rogers, Parliamentarian who read a resolution of appreciation to the out-going officers, and moved that it be adopted. Motion carried.

The officers were installed by Mrs. Rogers. The gavel was presented by Mrs. Reynolds to Mrs. Holderby, who gave her acceptance.

The motion was made to adjourn, and it was carried.

MRS. T. S. CHALKLEY,
Recording Secretary

Norfolk.

The annual meeting of the Woman's Auxiliary to the Norfolk County Medical Society was held on October 25th at the Norfolk Yacht and Country Club, with the president, Mrs. M. S. Andrews, presiding. Reports of officers and committees were given. The highlight of the day was the presentation of past presidents from 1923 through 1948, and as each was introduced she took a moment to tell of something of interest during her term of office. The report of the nominating committee was accepted and following installation of new officers, a lovely tea was served by Mrs. Andrews.

CHRISTINE F. MAYO (MRS. L. E.)

Arlington

At the regular meeting of this Auxiliary on November 8th, Miss Anne Smith, Director of Nursing at the Arlington Hospital, spoke on Nurse Recruitment.

The Auxiliary gave a dinner dance on the evening of November 16th.

MARIE N. NORMENT (MRS. R. L.)

BOOK ANNOUNCEMENTS

Ecology of Health. The New York Academy of Medicine Institute on Public Health, 1947. Edited by E. H. L. CORWIN, Ph.D. The Commonwealth Fund, New York, 1949. xii-196 pages. Cloth. Price $2.50.

For The New Mother. By MILDRED V. HARDCASTLE, R.N. Illustrated by Shirley Tattersfield. The John C. Winston Company, Philadelphia, 1948. xii-163 pages. Cloth. Price $2.00.

Blood and Plasma Transfusions. By MAX M. STRUMIA, M.D., Sc.D. (Med.), Associate Professor of Pathology, Graduate School of Medicine, University of Pennsylvania; Director, Laboratory of Clinical Pathology, and of the John S. Sharpe Research Foundation, Bryn Mawr Hospital; etc. and JOHN J. McGRAW, JR., M.D., Instructor in Pathology, Graduate School of Medicine, University of Pennsylvania; Assistant Attending Pathologist, Bryn Mawr Hospital; etc. Philadelphia, F. A. Davis Company. 1949. x-497 pages. 124 Illustrations. Cloth. Price $7.50.

The Practice of Refraction. By SIR STEWART DUKE-ELDER, K.C.V.O., M.A., D.Sc. (St. And.), Ph.D. (Lond.), M.D., F.R.C.S., Hon. D.Sc. (North Western), Surgeon Oculist to H.M. The King; Knight of Grace of the Order of St. John; Consulting Ophthalmic Surgeon to the Army and the Royal Air Force; etc. Fifth Edition. St. Louis, The C. V. Mosby Company. 1949. xiv-317 pages, with 216 illustrations. Cloth. Price $6.25.

This is the 5th edition of the text originally published in 1928. This latest edition introduces newer information on anisekonia, streak retinoscopy and the orthoptic treatment of muscular imbalance. A chapter has been added on anomalies of convergence.

This book presents in sufficient detail for student and practitioner the principles and theory of the correction of defects in the optical system of the eyes and associated muscles. The text could well be in the library of every clinical ophthalmologist for study and reference and, it is felt by this reader, that the treatise is quite complete except for that rare clinician who wishes to delve deeper into the non-clinical phases of physiological optics.

The small size of the volume and the character of the printing and binding are to be commended.

L. C. B.

EDITORIAL

Robert Koch (1843-1910)

BEFORE Pasteur and Koch (Koch was twenty years younger than Pasteur), diagnosis was uncertain and treatment was entirely empirical. The only way we had to make a diagnosis was by the symptoms and the clinical course. Autopsy frequently threw no light on the etiology. As an example of the confused state of our knowledge, during the Civil War, the Surgeon General of the United States Army recognized the following terms in the surgeons' hospital reports: typhus, typhoid, common continued fever, remittent fever, quotidian, tertian, quartan, congestive, intermittent fever, bilious fever, etc.

Robert Koch was a miner's son and a graduate of the University of Göttingen. At the end of the Franco-Prussian War, he became a country doctor at Bomst in Wollstein. He was, by nature, an investigator and fitted up for himself a primitive, private laboratory in which he worked out the life history of the clostridium of anthrax, a disease that infested the cattle of the surrounding country. He proved beyond all question that the bacterium was the cause of the disease. He also worked out the technics for growing bacteria and with his solid media was able to obtain pure cultures of bacteria not only for spore bearing bacteria but for all others. His famous postulates, which must be fulfilled, before a germ can be considered beyond question the causative factor of a disease, prevented many premature announcements when new bacteria were being discovered so rapidly.

The next decade was characterized by feverish activity among a number of investigators. Koch, himself, discovered the cause of tuberculosis and Asiatic cholera; Neisser, the cause of gonorrhoea; Eberth, that of typhoid fever; Hansan, the cause of leprosy; Löffler, the causes of glanders and of diphtheria; Bollinger and Harz, that of actinomycosis; Fehleisen, that of erysipelas; Nikolaier, that of tetanus; Fraenkel, that of pneumonia; and Weichselbaum, the cause of epidemic cerebro-spinal meningitis. The immediate result of all this work was exactness of diagnosis. Later, as knowledge of the behavior of the various bacteria under favorable and adverse conditions accumulated, some, notably B. diptheria and Cl. tetani, were found to produce powerful soluble toxins. These toxins either quickly killed the host or else the host produced antitoxins that neutralized the toxin. By starting with weakened strains of bacteria and gradually working up, animals could be made to develop tremendous quantities of antitoxins which could be used for prevention or cure of the diseases in human beings. Other bacteria, such as the Eberthus typhosus, produced an endotoxin. For these no antitoxin could be developed, but an effective vaccine was made from their dead bodies. This was accomplished by a tremendous amount of work all over the world and resulted in founding a new science, i.e., immunology, as we learned how germs worked in the body. It all, however, was the result of Koch's discovery of how to grow bacteria in pure culture.

Shortly after Koch's first published work, i.e., on anthrax, he was given a position on the Imperial Board of Health in Berlin. Here he had better laboratory facilities. Later he was appointed professor of hygiene and director of the Hygienic Institute at the University of Berlin. Koch, however, cared little for teaching and in 1891, he became Chief of the Institute for Infectious Disorders, which was created especially for him.

We had the thrill of hearing this great man at an International Congress in Washington in the early part of this Century. As he came into the hall with "Popsy" Welch,

he looked to be a "pint-size" man of fine presence. His address was simple, plain and easy to follow. It was on this occasion that "Popsy" "pulled" his famous manuscript joke. Someone had told him that the Congress was a great affair and that he, by all means, ought to have a manuscript, so when "Popsy" got up to speak, he pulled a dozen or so sheets of paper out of his pocket and glanced at them occasionally. At the end of the session the reporters wanted to see his notes. The papers were entirely blank. We do not now remember what either Koch or Welch said but we do remember that to our young eyes, neither had feet of clay.

This is the 8th of a series "Doctors for whom the Public should be thankful."

Coarctation of the Aorta

PROGRESS in some medical fields has become so complicated that it must be made in "echelon" rather than in "tandem" fashion. An example of this is the contribution made by Dr. Robert Gross of Boston to the surgical treatment of coarctation of the aorta. This congenital defect imposes a block in the aorta, usually at the level of the ligamentum arteriosum. The blood pressure above the level of the block is usually considerably elevated. The pressure in the lower extremities is lower than in the arms, whereas normally the leg pressure is the higher.

No definitive treatment can be offered these patients except surgery. Without surgery approximately 25 per cent of individuals with this defect can expect reasonably long life without severe symptoms. About 25 per cent will succumb to aortic rupture, another 25 per cent will die from bacterial infection while the remaining 25 per cent will develop hypertensive heart disease and die from congestive failure or intra-cranial hemorrhage.

The contribution made by Dr. Gross, who has operated upon 115 patients, can hardly be considered a series of improvements with treatment of coarctation but rather a simultaneous attack on the various difficulties encountered on a broad front. It includes the careful development of a surgical technique based on preliminary animal experimentation, increased knowledge in the selection of operable cases, improvements in the use of aortic grafts, which are necessary in some cases, and a method of estimating blood loss during these operations in order that transfused blood may approximate in amount the blood lost.

The operation is a resection of that portion of the aorta which includes the block, with repair of this vessel by an end-to-end anastomosis. Success will depend on the establishment of a lumen sufficiently large to cause a satisfactory drop in the blood pressure above the level of the coarctation.

In order to accomplish this purpose, the section of aorta to be removed may be so long that a graft of human aorta must be interposed. It has been found that sections of aorta may be stored for such purposes for five to six weeks if kept in the proper medium at 4 degrees centigrade. These grafts are tested for viability by tissue cultures.

The development of a satisfactory surgical method of treating this condition is a triumph of modern surgery but its success is dependent on the existence of knowledge which permits proper selection of cases. The hazards of the operation, such as the existence of aneurysms of the intercostal arteries, must be evaluated. The need for grafts for repair when a long section of aorta is removed extends the ever increasing number of items stored in human tissue "banks".

Since the optimal time of performing this operation is said to be between the ages of 10 and 20 years, the existence of coarctation should be suspected in young persons

who have hypertension. Mere palpation of the femoral artery may give a lead. A measurement of the blood pressure in the leg will give further convicting information.

E.S.W.

Dr. Fishbein Resigns as Editor of the Journal of the American Medical Association

DR. MORRIS FISHBEIN'S resignation was officially announced at the opening meeting of the House of Delegates at the third annual clinical session of the American Medical Association at Washington, on December 6th. His retirement comes after a long period of service and an unbelievably full measure of accomplishment. It is hard to think of the A. M. A. without Dr. Fishbein or of Dr. Fishbein without the A. M. A. In the eyes of the public they are one and the same. He came with the Association, fresh out of the medical school, as an understudy to the late George Simmons. When he was an undergraduate he was inspired by George Vincent, later President of the Rockefeller Foundation, to learn to speak rapidly, an art that he developed to perfection. He had the gift of reading rapidly, taking in a whole page at a glance. He must have had the knack of working rapidly or he never would have had time to accomplish all the things he did.

His outstanding achievement was the *Journal of the American Medical Association* which he developed into the greatest Medical Weekly in the world. Besides, he edited a number of outstanding special journals, and a health journal for the lay public. According to the *Washington Star,* the name of this magazine is to be changed from "Hygeia" to "Your Health Today". He launched a campaign against quacks, patent medicines and fraudulent advertisements. This gained for him many powerful enemies and numerous damage suits but it saved the American public many lives and incalculable money. His damage suits mounted up into the millions of dollars, but he lost not a single suit.

On the side, Dr. Fishbein is a Professor in two medical schools and Advisor to the Federal Research Council, Army Medical Library and numbers of other similar bodies. Recently he was named Editor of the *Journal of the World Medical Association.* In the 37 years that he has been with the American Medical Association, medicine has made tremendous strides, until now this country unquestionably has the finest medical schools, the finest hospitals and the most efficient medical care in the world. The results in lowered mortality, low absenteeism from sickness and increased life expectancy bear out this statement. So much for the credit side.

On the debit side is the increased expense of medical care. While the profession was bending every effort to improve its professional practices, it neglected the business side. Had we been a trust or trade union as our enemies claim, or even a big business, we would have taken steps to correct this back in the thirties when the report of the Committee on the Cost of Medical Care was published. We should have shown that the public was getting more for its money than ever before. Formerly, a case of pneumonia cost twenty or thirty dollars and most patients with that disease died. Now, when a case costs ten times as much only three or four per cent die. We should have shown that most of the increased cost was due to hospitals and increased laboratory tests and nursing care, and that the doctors got very little of the increase. And finally, we should have developed means by which the great middle class could pay the increased cost. Instead of advertising along these lines as the General Motors or the Bell Telephone Company would have done, we were maneuvered into a position of being opposed to any change. To make matters worse, the Medical Society of the District of

Columbia, the Trustees of the American Medical Association, and Dr. Fishbein were sued by the U. S. Government for maintaining a trust and nominally lost, and the Supreme Court sustained the Lower Court. This was the first legal setback that Dr. Fishbein had ever met, and it damaged his prestige.

For several years a number of members of the House of Delegates, notably those from California, have been displeased with the public relations of the A. M. A. This discontent came to a head last spring when Dr. Fishbein engaged in a debate on compulsory health insurance sponsored by the Town Meeting of the Air. His opponent took full advantage of a diary that the editor had been publishing in the *Journal of the A. M. A.* for years. He called it Dr. Pepys' Diary and it appeared in the advertisement pages, along with jokes and squibs. Into this diary crept inconsequential errors every now and then. For instance, after a visit to Richmond a number of years ago, he said the mint juleps were made of Scotch whiskey. After a recent visit to Great Britain some errors of dates and time appeared in this column. Mr. Cruickshank, his opponent, used these to make it appear that Dr. Fishbein was an untrustworthy witness. At the next meeting of the Trustees, Dr. Fishbein was ordered to stop publishing Dr. Pepys' Diary and to abstain from speaking for the A. M. A. To one on the sidelines it appears that he was made a whipping boy for the Trustees. Had they started their public relations work ten years earlier this need not have happened.

SOCIETY PROCEEDINGS

The Smyth County Plan for Care of the Medically Indigent.

Ten months ago the Smyth County Medical Society decided that in order to prevent the practice of medicine from becoming nationalized or socialized we must begin solving the very problems that were causing the clamor for the same at the grass roots level. Accordingly a committee consisting of Drs. R. C. Potter, R. H. Harrington, L. E. Jarrett, Walter Schiff, C. C. Hatfield and G. E. Godman was appointed by the President to study this problem. This committee devised a questionnaire which was sent to the Welfare Departments of the 100 Virginia counties. The results from the 38 counties reporting were tabulated in graphic form and it was discovered that Smyth County did not deviate far from the average. The results did disclose, however, that there are vast differences in how county funds are expended for health services. Some of the poorer counties did far more for their medically indigent in proportion than did some of the richer counties. Out of 38 counties only 21 met any part of their medical needs and only 11 of these remunerated their doctors. This survey did indeed indicate an appalling lack of interest and care for the medically indigent but it also indicated that only about 1.23% of the population are totally dependent upon the Welfare Departments for their care. According to another survey made among the doctors in Smyth County there are about 16½% of people who either cannot or will not pay for their medical services. This means that about 15% are in the so-called partial or borderline medically indigent class. It consists of those who can pay for minor services but not major services and those who would not pay if they could. Thus, it is only about 10% of the population who can be called medically indigent which includes the 1½% who are totally indigent. This is a far cry from Oscar Ewings claim that 60% of the population are unable to secure adequate medical care; therefore, this limited our problem to this 10%.

Now it was also determined that in this county these people are already receiving care from their local doctors without general public recognition of their physicians' free services which amount to 16½% of their practice or 1 out of every 6 patients. So actually these people are not suffering from lack of care because the local doctors bear the brunt of the work. Where else can you find a profession or trade in which so large a percentage of time and work is given to charity.

With these facts and figures in mind it was de-

termined by the committee and approved by the Society to make certain recommendations to the Welfare Department in the hope that some of the faults might be corrected here at home rather than through a large national organization, following the old adage "Charity begins at home". This follows the same line that the American Medical Association has taken that if these problems are solved at home as they should be, then a large national structure becomes unnecessary. These recommendations were designed firstly to help those who are actually on Welfare rolls and therefore totally indigent and secondly to help the partial or borderline cases. We recommended to the Welfare Department two diferent plans—i.e., that the Welfare Department establish free clinics to be manned without charge by the physicians in the county, or that cards be issued to each bona fide client of the Welfare Department entitling these card holders to medical attention from the physician of their choice. This attention would be furnished by the physician without charge to the patient. It was also recommended in conjunction with this care that a blanket group Hospitalization Policy be taken out for these same clients. The druggists of the county have cooperated fully with this plan and have agreed to furnish medicine on prescription to these clients at cost plus 10%. Thus the 1½% of total indigents would have their medical needs completely covered. The physicians of the county through the Society approved these plans and agreed to cooperate fully. These two plans were brought before a meeting of the Board of Public Welfare and a part of the second plan adopted as of November 1, 1949. All clients and their families were issued cards as described above. On the backs of these cards is a space for dates and the physician's initials for each visit. This was put there to furnish a guide as to how much was being done for each family and to cut down any possible malingering or riding a free horse. The second part of this plan, the adoption of a blanket insurance policy, was not put into effect as the Department of Public Welfare felt that the funds already being expended for hospitalization were adequate for their needs.

In summary it is felt that we, as a Society, have begun to fulfill a crying need in our county, through our efforts in the past ten months. These people are now and always have been a responsibility for the taxpayers. They are our responsibility now. The doctors have been shouldering the load in the past without complaint or credit but since this great hue and cry for socialization of medicine has arisen it is time for us to point out to the public where we have been doing it but failed to publicize this fact. It is also time for the public themselves to shoulder some of the responsibility for these people.

It is further true that we have only partially solved this problem and we still have to find a way to care for the next 10% of the population who are borderline or partially indigent. Many of these may be helped through group hospitalization plans such as Blue Cross and Blue Seal through further education of employers along these lines.

It must be pointed out that this first step in the solution of this problem obviates the necessity for regimentation and provides free choice of doctors thereby solving and eliminating two very undesirable socialistic features of any national welfare program. Our next step should and will be finding a solution to care for borderline cases.

Williamsburg-James City County Medical Society.

This society met for dinner and a business meeting at the Williamsburg Lodge on November 31st, with Dr. Joseph E. Barrett, Williamsburg, presiding.

The President, who had served as delegate at the Medical Society of Virginia meeting at Old Point Comfort in October, reported on the proceedings of the House of Delegates and made some comments on the scientific program and exhibits. It was noted particularly that the exhibit of the Eastern State Hospital was given second prize in the scientific exhibits.

The scientific portion of the meeting was a talk by Robert O. Dowdell, D.D.S., resident dentist at Eastern State Hospital, who spoke on "Medical-Dental Relations" and gave a very interesting and inspiring treatment of this topic.

GRANVILLE L. JONES,
Secretary

The Richmond Academy of Medicine

Held its annual meeting on December the 13th, at which time the following officers were elected for 1950: President, Dr. Henry W. Decker; president-elect, Dr. Kinloch Nelson; vice-presidents, Dr. Thomas B. Washington and Dr. Robley D. Bates, Jr. In addition to the above, the Board of Trustees

will include Dr. Guy W. Horsley, Dr. R. D. Butterworth, Dr. Emily Gardner and Dr. Harry J. Warthen who will be chairman. Following the meeting the usual Christmas party was served in the dining room of the Academy.

The Washington County Medical Society

Held its first fall meeting at the Martha Washington Inn, Abingdon, on October 20th, under the presidency of Dr. R. S. LeGarde, Damascus. Dr. J. N. Chew, Bristol, Tennessee, presented an excellent paper on Psychoneuroses as Seen by the Internist.

Dr. James M. Suter, Abingdon, is secretary-treasurer of this Society.

The James River Medical Society

Held its quarterly meeting at Fork Union on November 16th, and the following officers were elected: president, Dr. Garland Dyches, Dillwyn; vice-president, Dr. L. W. Hulley, Palmyra; and secretary-treasurer, Dr. W. A. Pennington, Buckingham.

Danville-Pittsylvania Academy of Medicine.

At the meeting held on November 12th, the following officers were elected: president, Dr. J. J. Neal, Danville; vice-presidents, Dr. Allen Byrd, Danville, and Dr. Girard Thompson, Chatham; and secretary-treasurer, Dr. John L. Clare, Danville.

Petersburg Medical Society.

At a recent meeting of this Society, Dr. Thomas B. Pope was elected president, Drs. Carney C. Pearce and William Grossmann, vice-presidents, and Dr. Glenn Phipps, secretary-treasurer.

The Scott County Medical Society,

Which has been inactive for sometime, held a meeting early in December and has reorganized. The new officers are: Dr. W. L. Griggs, Jr., of Gate City, president; Dr. Jack S. Shaver, also of Gate City, Vice-president; and Dr. G. C. Honeycutt. Jr., of Gate City, secretary-treasurer. Two new members were admitted at this time.

NEWS

The Seaboard Medical Association of Virginia and North Carolina

Held its fifty-fourth annual meeting at Old Point Comfort, Va., December 6-8, under the presidency of Dr. Russell Buxton of Newport News. A number of interesting papers were presented and Wednesday evening was given over to social pleasures. Dr. John A. Payne, II, of Sunbury, N. C., was elected president, and the following vice-presidents named: Dr. James M. Habel, Jr., Suffolk; Dr. F. P. Hunter, Warrenton, N. C.; Dr. Rex Blankinship, Richmond; and Dr. Graham Kinsey, Washington, N. C. Dr. Clarence Porter Jones, Newport News, who has served as secretary-treasurer of the association for more than thirty years, was named secretary emeritus, and Dr. Everett Sawyer of Elizabeth City, N. C., was elected as secretary-treasurer. Elizabeth City, N. C. was selected as the 1950 place of meeting.

Health Department News.

Dr. Leroy D. Soper has been appointed Health Officer for the Pittsylvania County Health District with headquarters in Chatham. This appointment became effective November 1.

Dr. Mildred E. Scott resigned November 1 as Health Officer for the Carroll-Grayson Health District.

Dr. J. E. Malcomson resigned November 18 as health officer for Halifax County.

Graduate Medical Instruction at the University of Virginia.

Dr. C. N. H. Long, dean of medicine at Yale University, was the third speaker presented this year on the program of graduate medical instruction for house officers and staff members of the hospital of the University of Virginia, on October 19th. He spoke on some recent advances in physiology and bio-chemistry which bear upon the problem of clinical diabetes mellitus.

On October 3rd, Dr. Louis K. Diamond, who is in charge of the national blood program of the Red Cross, talked about present and future uses of blood and blood derivatives in therapeutics.

Dr. Reginald Fitz, assistant dean of medicine at Harvard, was the speaker on the 24th of October.

Dr. George W. Leavell,

Bristol, has been named a District Governor of Rotary International for 1949-50. As Governor, he coordinates the activities of 45 Rotary Clubs in parts of Virginia and Tennessee, and during the year

visits each of these clubs to offer advice and assistance.

Dr. Eugene R. Grether,

Recently of Alexandria, is attending the College of Dental and Oral Surgery of Columbia University, New York City. He plans to complete his studies there in June 1951.

Medical and Surgical Symposium.

The Watts Hospital in Durham, North Carolina, is putting on a two-day medical and surgical symposium on February 15 and 16. The following will be on the program: Drs. Edward Davis, Chicago; Malcolm Dockerty, Rochester, Minnesota; Mims Gate, New Orleans; Russell Haden, Crozet; T. Hale Ham, Boston; Donald S. King, Boston; Byrd S. Leavell, Charlottesville; Robert R. Linton, Boston; Richard Overholt, Boston; William Parson, Charlottesville; Wayne Rundles, Durham; M. C. Sosman, Boston; and Shields Warren, Boston.

Virginia doctors who wish to attend should get in touch with Dr. W. R. Stanford, 410 One Eleven Corcoran Street, Durham, North Carolina.

Sterility Award.

The American Society for the Study of Sterility is offering an Annual Award of $1,000 known as the Ortho Award for an Essay on the result of some clinical or laboratory research pertinent to the field of sterility. Competition is open to those who are in clinical practice as well as to individuals whose work is restricted to research in basic fields or full time teaching positions. The Prize Essay will appear on the program of the forthcoming meeting of the American Society for the Study of Sterility, which is to be held at the Sir Francis Drake Hotel in San Francisco on June 24 and 25, 1950.

Full particulars may be obtained from the Secretary, Dr. Walter W. Williams, 20 Magnolia Terrace, Springfield 8, Massachusetts. Essays must be in his hands by April 1, 1950.

Dr. John Hunter Selby,

Recently of Alexandria, where he specialized in the practice of roentgenology, has retired and his permanent residence is now 1021 New York Avenue, Cape May, New Jersey.

Dr. Russell N. Snead,

Class of '43, Medical College of Virginia, who has been practicing at Columbia since his return from service in the Navy, is now located on Hull Street Road, Richmond.

Dr. Austin I. Dodson,

Richmond, recently returned from Los Angeles, California, where he gave a series of five lectures before the Los Angeles Urological Postgraduate Convention.

Dr. Frank C. Pratt,

Who has practiced medicine in Fredericksburg for forty-one years, has retired from active practice and will live in Palmer, Lancaster County, in his new home on the shore of the Rappahannock River.

Dr. W. R. Southward,

Richmond, has been appointed by Dr. W. C. Caudill as a member of the Committee on Venereal Disease Control of the Medical Society of Virginia.

Medical College of Virginia News.

Dr. Robert A. Kimbrough, professor and chairman of the Department of Obstetrics and Gynecology, Graduate School of Medicine, University of Pennsylvania, gave the first Charles R. Robins Memorial Lecture at the College on November 11th. He discussed "Carcinoma of the Endometrium". The new lecture was established by Drs. Spotswood Robins and Charles R. Robins, Jr., in memory of their father.

The auditorium of the College Hospital was dedicated on November 14th to the memory of Dr. George Ben Johnston, one of the pioneer leaders of the College. Dr. Frank Johns, president of Johnston-Willis Hospital, Richmond, gave the principal address on the occasion and told of Dr. Johnston's contributions to the college and to the field of medicine.

American College of Physicians, Virginia Section.

At the meeting held on October 11th at Old Point Comfort, Dr. Douglas G. Chapman, Richmond, was elected chairman of the section, and Dr. James F. Waddill, Norfolk, re-elected secretary. The winter scientific meeting of the Virginia section will be held in Richmond on February 22nd.

Dr. Gayle Heads Southern Psychiatric Association.

At the meeting of the Southern Psychiatric Association in New Orleans the last of November, Dr.

R. Finley Gayle, Richmond, was elected president. Other officers are: Dr. R. Burke Suitt, Durham, N. C., president-elect; Dr. Arthur J. Schwankenberg, Dallas, Texas, chairman of the board of regents; and Dr. Newdigate Owensby, Atlanta, secretary-treasurer. Drs. Joseph L. Knapp, Dallas, O. S. Hauk, Nashville, and Walter J. Otis, New Orleans, were named to the Board.

Dr. William W. Sager

Has been named chief of cord injury service at McGuire Veterans Administration Hospital, Richmond. He is a native of Shenandoah County and has been engaged in the practice of surgery in Washington, D. C.

Dr. Nathan P. Fitts

Has been appointed as physician of the City Home, Richmond. He is a graduate of the Medical College of Virginia and recently has been in practice at Emporia and at Swan Quarter, North Carolina.

Dr. Raymond Jackson has been transferred from this post to become assistant medical superintendent of Pine Camp Hospital, Richmond.

The American College of Allergists

Will hold its sixth annual congress at St. Louis, January 15-18, at the New Hotel Jefferson. One of the highlights of the meeting will be the awarding of the von Pirquet medal, which will be presented to Dr. Paul Kallos of Sweden, by President Jonathan Forman at the dinner-luncheon on the 17th.

Guest speaker will be Dr. Vera B. Walker, chairman of the British Allergy Society, London, who will speak on "Allergy of the Eye". Among the subjects to be presented will be: Dangers from Cosmetics; Snake Venom in the Treatment of Chronic Urticaria; Shortening the Treatment of Hay Fever; Allergy in France; Allergy in England and Ireland; The Relation of Allergy to Character Problems in Children; and Marital Adjustments in Parents of Allergic Children.

Dr. Fred W. Wittich is secretary-treasurer of the College.

Dr. Arthur Broaddus Gravatt,

Ellerson, recently celebrated his sixty-fifth birthday and the practice of medicine at the same place for forty years. About 250 people went by to wish him well and take gifts, among them being a television set.

Wanted.

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Wanted.

Technician, registered or eligible for registry for clinical laboratory in a 150 bed hospital in Virginia. Full time pathologist, five technicians. Salary, $185.00 with meals and laundry. Apply C-O, care of this journal. (*Adv.*)

OBITUARIES

Dr. Edwin Jones Nixon,

Who for nearly fifty years practiced in Petersburg, died December 9 at the age of seventy-two, having been in bad health for several years. He attended the University of North Carolina and received his degree in medicine from the University of Maryland in 1899. He served in the Medical Corps of the army during World War I, and had been a member of the Medical Society of Virginia for many years. At its last meeting he was the recipient of the Fifty Year award from the Society. His wife survives him.

Dr. William F. Grigg,

Richmond, died November 29th, at the age of sixty-six. He was a native of Jarratt and a graduate of the Medical College of Virginia in 1909. Dr. Grigg had practiced in Richmond since 1915 and served as instructor in orthopedic surgery at the College from 1917 to 1920. He was a Mason and had been a member of the Medical Society of Virginia for thirty-four years. His wife and two sons survive him. A son is Dr. William F. Grigg, Jr., who is located in Richmond.

Dr. Clarence Philip Obenschain,

Retired Staunton physician, died November 29th. He was seventy-one years of age and a graduate of the former University College of Medicine, Richmond, in 1904. He had practiced in Staunton since 1928 and served for a number of years as coroner for Augusta County. Dr. Obenschain was formerly

a member of the Medical Society of Virginia. His wife and ten children survive him.

Dr. Samuel Hill Yokeley,

Of Meadowview, died June the 24th at the age of seventy. He received his medical education at the former University College of Medicine, Richmond, from which he graduated in 1909 and had spent most of his professional life in Washington County.

The Washington County Medical Society, of which Dr. Yokeley was a charter member, apprized of the loss of one of its distinguished members, at its meeting on October the 20th (the first since his death), took this occasion to stand silently in respect to his memory, and adopted the following resolutions:

BE IT RESOLVED that the members of the Washington County Medical Society express their sincere sympathy to Dr. Yokeley's family in their grief.

The death of Dr. Yokeley has brought to each member of the society a sense of deep regret and feeling of loss.

He was a beloved physician of the physicians and people of Washington County and his life's work has erected a monument in the hearts of those he served so devotedly.

This resolution is to be spread upon the minutes of the society, a copy published in the VIRGINIA MEDICAL MONTHLY, and a copy sent to the family of Dr. Yokeley.

P. S. SMITH
R. L. HILLMAN
R. A. MORISON
H. M. HAYTER
Committee

Dr. G. G. Crawford,

The following resolutions were passed by the Shenandoah County Medical Society at its meeting November 10, 1949:

WHEREAS it has pleased our Heavenly Father to remove from our midst our former president of this Society, Dr. G. G. Crawford:

BE IT RESOLVED that, in the passing of this member, our Society has sustained a profound loss as well as the respective community in which he lived;

BE IT RESOLVED that we, the members of the Shenandoah County Medical Society, extend to his family our sincere sympathy in their bereavement;

AND FURTHERMORE BE IT RESOLVED that a copy of these resolutions be spread on the minutes of our Society, and that a copy be sent to his widow.

FRANK W. GEARING, JR., M.D.,
Secretary.

Dr. Allen A. Perkins

Died at Norfolk General Hospital October 29th in the 59th year of his life. He was a valued member of the Norfolk County Medical Society, and, therefore, our close friend and associate. Through the medium of our Norfolk hospitals, the Kings Daughters Clinic, and in his general practice he worked with constant and undiminished eagerness for the comfort and well being of humanity.

With a distinguished background of a family that had long been prominent in the medical affairs of Norfolk it was only natural that Dr. Perkins was constantly inspired to attain success in everything he undertook.

All of us who knew and worked with Dr. Perkins respected and admired him. He was possessed of a sense of honor which was never conscious of temptation. His devotion to his loved ones, to his patients, his friends and associates was a paramount guide in the conduct of his life.

We who belong to the medical profession, along with his countless number of friends, mourn his loss, and therefore unanimously adopt this resolution of sympathy in memoriam to our friend and associate at this our regular monthly meeting held this seventh day of November, 1949.

BE IT RESOLVED that a copy of these resolutions be sent to his family, recorded in the minutes of the Norfolk County Medical Society and to the VIRGINIA MEDICAL MONTHLY.

JOHN FRANKLIN
THOS. M. VORBRINCK
DANDRIDGE P. WEST, *Chairman*

Dr. J. Dilworth Stroud.

WHEREAS the Norfolk County Medical Society views with sorrow and deep regret the untimely and unfortunate passing of one of its colleagues, Dr. J. Dilworth Stroud on October 25, 1949; and

WHEREAS he was born August 3, 1885, in Norfolk, son of John and Emma Stroud; took his pre-college education at private schools and received his medical degree from the University of Virginia, 1908; interned at Old St. Vincents Hospital, Norfolk, and began practice of medicine in 1909; was a member of Medical Society of Virginia, Norfolk County Medical Society and American Medical Association; Ruth Lodge No. 89, Knights Templar, and the Shrine; and

WHEREAS his loss to his family and a host of friends and patients who are better for having known him for these many years, will continue to feel his loss for many more;

THEREFORE BE IT RESOLVED that the Norfolk County Medical Society deeply regrets Dr. Stroud's passing, and extends their sympathies to his bereaved family; and

BE IT FURTHER RESOLVED that these sentiments be spread upon the minutes of the Norfolk County Medical Society, that a copy be presented to his family, and a copy sent to the VIRGINIA MEDICAL MONTHLY.

J. FRANKLIN WADDILL
WILLIAM R. TYSON
ALBERT V. CROSBY, *Chairman*

ATLANTA GRADUATE MEDICAL ASSEMBLY

Municipal Auditorium

Atlanta, Georgia

February 6, 7, 8, 1950

PROGRAM

A. H. Blakemore	Presbyterian Hospital	Portal canal shunt
Alexander Brunschwig	Memorial Hospital	Operability of cancer
Meredith F. Campbell	New York	Urology
Louis K. Diamond	Harvard Medical School	RH factor
Arthur C. DeGraff	New York	Heart
Maxwell Finland	Harvard Medical School	New antibiotics
Richard H. Freyberg	Cornell University	Compound E in arthritis
Chevalier L. Jackson	Philadelphia	Bronchoscopy
Herbert C. Maier	Presbyterian Hospital	Chest surgery
James F. Norton	Margaret Hague Maternity Hospital	Extra peritoneal caesarean section
Eugene P. Pendergrass	Pennsylvania Hospital	X-ray
E. R. Pund	University of Georgia	Smear diagnosis of cancer
R. L. Sanders	Memphis	Biliary and peptic ulcer surgery
Albert M. Snell	Mayo Clinic	Medical treatment of gall bladder and liver
Donald H. Stubbs	George Washington University	Vascular and circulatory collapse
Walter G. Stuck	Nix Hospital	Backache
Oscar Swineford	University of Virginia	Allergy
Willard O. Thompson	Chicago	Misuse of estrogens—obesity
Richard W. TeLinde	Johns Hopkins Hospital	Cancer in situ (cervix)
Julius L. Wilson	Tulane University	Chest disease
Harold G. Wolff	Cornell University	Headache

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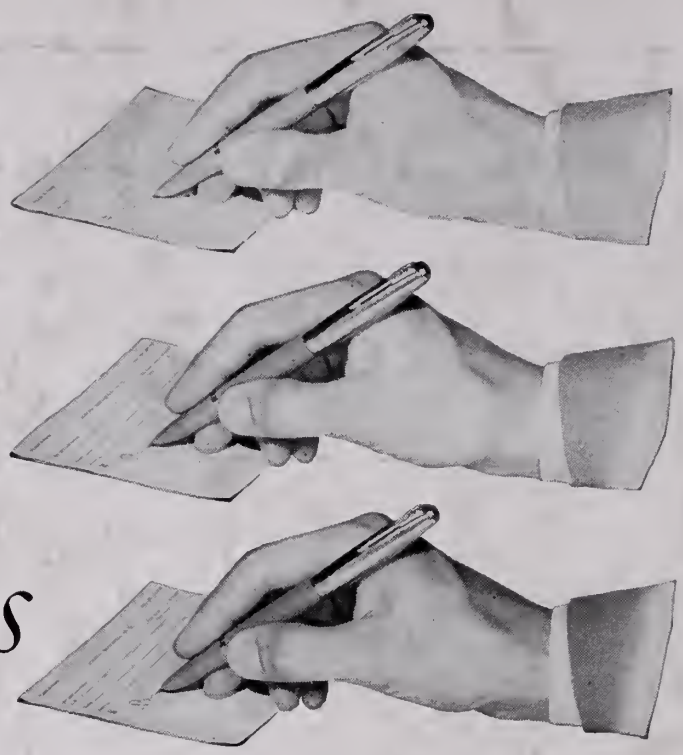

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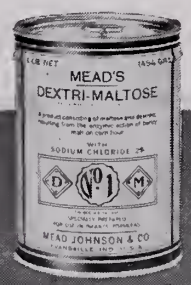

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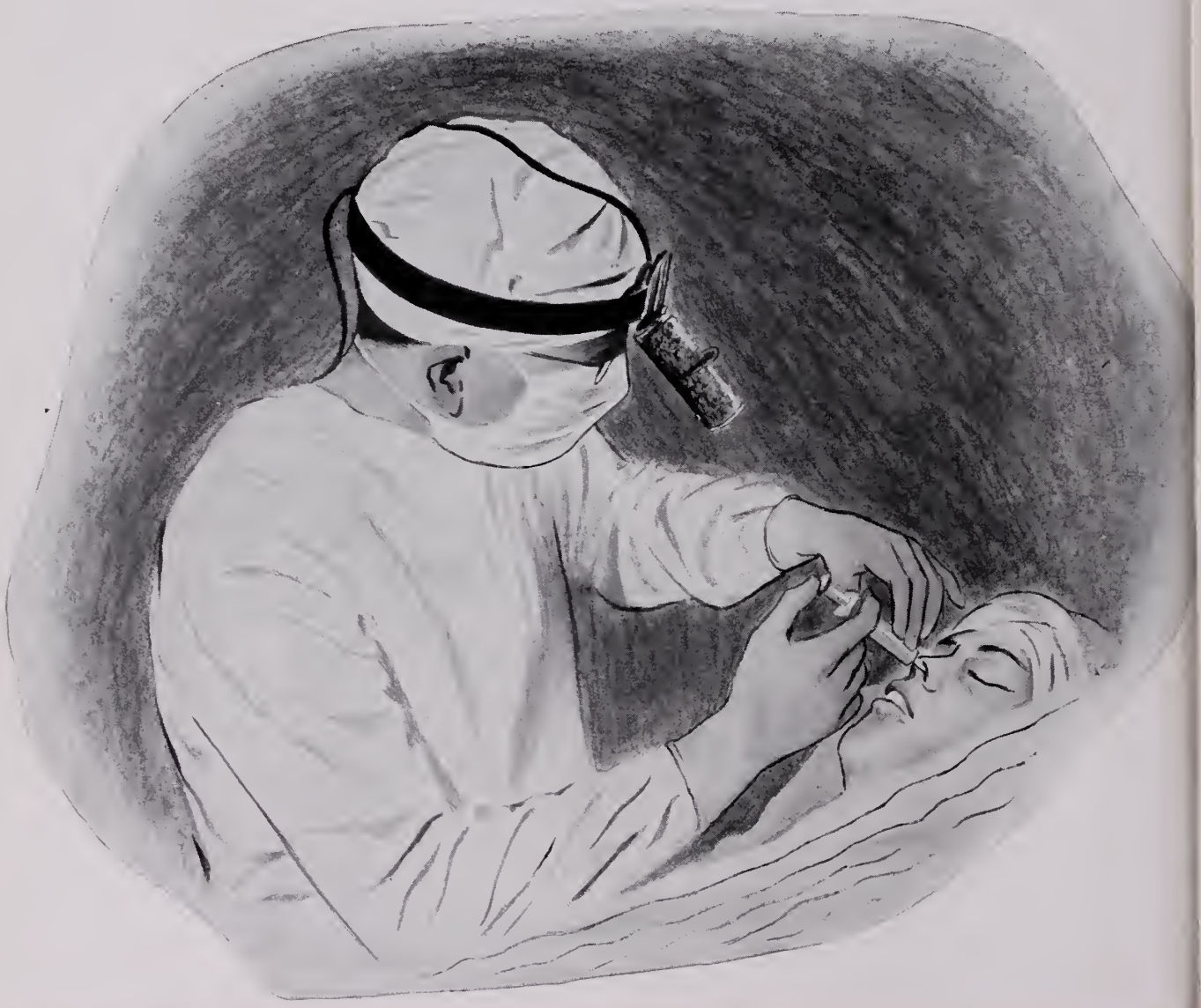
EPHRAIM McDOWELL
ISSUE

February 1950

Seal capillaries with natural clot



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GUEST EDITORIAL

Retreat From Progress

THE Legislative Committee to Study Coordination of Police Functions has recommended to the General Assembly that the Chief Medical Examiner's Office should be transferred to the State Police. This must fill with dismay the many members of the medical profession who labored so arduously to reform the archaic coroner system that existed in Virginia prior to 1946. That the Society's efforts have been a signal success is attested to by articles in the national press lauding our system as it now exists. Only in December 1949, *Coronet* in an article on Medical Examiner Systems had this to say:"—in the early 1930's, Boston was in the lead with its reformed medical examiner law. But today the recently improved Virginia Law is the best model for other states in urgent need of reform."

Commenting editorially on the proposed recommendation, the editor of the *Richmond News-Leader* had this so say:

"The Chief Medical Examiner's Office, now a part of the State Health Department, is functioning superbly, its facilities are fully available to the State Police and we know of no particular advantage to be gained by transferring the agency bodily to the State Police."

The new recommendation is based upon a well-intended, but erroneous, concept of the 1946 law. What is not well understood is that the Medical Examiner system is primarily a medical fact-finding function delegated solely to physicians. The system permits the integration of medical evidence not only with various law enforcement agencies and prosecutors, but in determining issues at civil law, industrial commissions, health agencies, etc. Law enforcement and aid to criminal prosecution numerically form the least of the medical and laboratory problems that involve a coroner investigation.

A major contention of the Commission is that the transfer of the Chief Medical Examiner's Office to the State Police would provide that agency with a laboratory. This would entirely change the character of the Chief Medical Examiner's laboratory and destroy its usefulness for the purpose for which it was created. This laboratory is essentially a biological one. Under the supervision of the toxicologist, it deals with chemical and biological problems—identification of poisons in human tissues and body fluids, identification and analysis of drugs and chemicals, identification of blood and blood stains, analysis of stains in question of rape, hair and fibre identification and the like. Physicians frequently call upon the laboratory for aid in diagnosis of poisoning of patients under their care. Numerous requests are received for analysis in questions of occupational poisoning. All these studies require a final medical review and interpretation, and must be integrated with findings reported by coroners and pathologists or attending physicians.

A police laboratory is one which deals with general methods that require no medical supervision or opinion. Fingerprinting, moulage studies, firearm identification, arson investigation, restoration of serial numbers, photography, examination of special types of residue (dirt, metal, glass, etc.), handwriting and typewriting identification and

many other physical methods are examples of work done in typical police laboratories.

There are in the Chief Medical Examiner's Laboratory no facilities for this type of work and for the purposes for which the Medical Examiner system was instituted, none are needed. It would require thousands of dollars of necessary equipment together with a greatly increased personnel to produce such a laboratory. How such an expenditure could be justified when only a hundred miles away the Federal Bureau of Investigation maintains probably the finest crime detection laboratory in the world, fully available at all times to the State Police, is difficult to understand.

Eminent medico-legal authorities, such as Dr. Allen Moritz, Dr. Richard Ford, Dr. Russell Fisher and Dr. Thomas Gonzales, to name a few, have constantly emphasized that the public interest and duties thereto of a medical examiner's office extend into numerous channels which are not related to police activities.

Since the inception of the medical examiner system at least two other states have adopted the statute in its entirety. At the present time, eighteen other states are studying our legislation with a view to its early adoption.

With the utmost cooperation of the Medical Profession of Virginia and with sympathetic interest from intelligent law enforcement agencies, the present Medical Examiner's system has served in the past three years as an example of progressiveness to the rest of the country. To relegate it to the role of a police officer would without question destroy one of the finest things the medical profession has done for the State of Virginia.

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——Das Schräg verengte Becken nebst einem Anhange über die wichtigsten Fehler der weiblichen Beckens überhaup. Mainz. Victor von Zabern, 1839.

——Das weibliche Becken, Carlsruhe. C. F. Muller. 1825.

Naegele was born in Düsseldorf. He was professor of medicine and obstetrics and Director of the Lying-in Hospital in Heidelberg. He is best known for his description of the mechanism of labor and his work on deformed and contracted pelves, especially the generally contracted pelvis. He was the first to describe the obliquely contracted pelvis which bears his name. In thirty years he was able to find and accurately describe thirty-five female and two male pelves that showed this deformity. They were found in most of the European clinics. One was that of an Egyptian mummy. The most familiar rule for estimating the date of confinement bears his name. He was a member of medical and scientific societies in Moscow, Paris, Copenhagen, Stockholm, Wilna, Berlin, Bonn, Dijon, Heidelberg, Jassy, Leipsig, Lyon, Mainz, Marseilles, New York, Philadelphia and Rostock.

His *Das Schräg verengte Becken* is extremely rare. The translators of the Centennial edition make the statement that "Very few medical men or rare book collectors have seen a copy." There are only four known copies in this country.

TOTAL COLECTOMY FOR BENIGN CONDITIONS—WITH A CONSIDERATION OF ANAL ILEOSTOMY WITH SPHINCTER PRESERVATION*

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Sphincter saving operations in the treatment of carcinoma of the rectum are prominent in today's surgical literature. The present discussion concerns itself with total colectomy for benign conditions. We are therefore not concerned with the arguments which have been advanced for and against sphincter saving operations in the treatment of malignant disease of the rectum. Furthermore, since it is a total colectomy which is to be performed, this sphincter-saving procedure is designed to avoid not a colostomy, which is a fairly tolerable condition under modern management, but an ileostomy, which, even with the use of a Rutzen bag is at best a trying affair.

The two conditions for which we conceive total colectomy to be most commonly indicated are familial polypoid adenomatosis of the colon, and chronic non-specific ulcerative colitis.

Polypoid adenomatosis of the colon is a familial disease which is most strikingly characterized by the fact that all of the sufferers will inevitably develop cancer of the colon, sometimes several independent cancers of the colon, if they do not first die of some other affliction. Ordinarily the symptoms of adenomatosis of the colon are relatively clearcut with bloody diarrhea and resultant inanition and cachexia. A familial history of a similar affection in other members of the family or a story that several members of the family have died of cancer of the colon is further suggestive of this disease. The symptoms may make themselves known at any time from early childhood, the youngest case reported having been two years old when symptoms began, and cancer may develop as early as the age of fifteen. Many patients, however, do not develop symptoms until middle age or later. We have had one patient, a young man of 27 who was completely asymptomatic and whose disease was brought to light only because his mother was admitted to a hospital with three simultaneous cancers among innumerable polyps of the colon, for which a total colectomy and abdomino-perineal resection were required. Another patient, a woman of 25, developed bloody diarrhea and made the diagnosis herself since her mother had died of cancer of the colon, one sibling had died of bloody diarrhea and two living siblings had already been diagnosed as having polypoid adenomatosis of the colon. Occasionally, however, the disease may be extremely insidious. About two months ago I was asked to see a coal miner who complained of intermittent attacks of sharp, right upper quadrant abdominal pain. The story was not characteristic of any disease complex, and a complete investigation disclosed only an equivocal shadow in the hepatic flexure of the colon on barium enema. It was finally decided to explore the patient for this lesion and by pure chance, during the preoperative administration of an enema, the patient had a large hemorrhage from the bowel. Operation was postponed and the patient sigmoidoscoped. There were innumerable polyps of the rectum as far as the sigmoidoscope could reach, none of the polyps being more than 2 or 3 mm. in diameter. Subsequent exploration demonstrated innumerable small polyps of the entire colon and a small carcinoma at the hepatic flexure, a flat disk—no more than 2 cm. in diameter. However, this apparently early tumor had already metastasized and there were several carcinomatous nodules in the liver. For that reason, no more was done than to resect the colon down to the sigmoid with an ileo-sigmoidostomy. This case illustrates the grave danger which exists for patients with polypoid adenomatosis and underscores the necessity for complete removal of all the polyp-bearing mucosa. A good many authors in this country and abroad shrink from a total colectomy with a permanent abdominal ileostomy and recommend a compromise consisting of resection of the colon down to the upper rectum with an anastomosis with the ileum at this point. Subsequently the rectal segment is repeatedly fulgurated in an attempt to destroy all of the polyps. In patients such as these whom we have described, it is hardly possible to fulgurate the myriad of polyps which exist and, even if all of them are successfully destroyed, it must be expected

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that the mucosa which regenerates will retain its genetic predisposition to polyp formation and that some of these polyps in turn will inevitably become malignant. It is true, of course, that Doctor Harvey Stone, Doctor Fred Rankin, and others in this country, and Lockhart-Mummery and others in England, have had long term cures with this combination of procedures. On the other hand, some of the patients so treated have subsequently been reported in the literature to have developed cancer in the remaining segment and it is just in the segment which is left behind that cancer most commonly occurs. Furthermore, it is only reasonable to suppose that a good many patients whose cases have not been reported have undergone the same procedure with subsequent death from cancer in the retained segment. We feel quite strongly that total extirpation of the colonic mucosa is required if the patient is to be assured that death from cancer will not occur. However, there is no need to remove the muscular coats of the rectum nor the sphincter muscles if any end can be gained by preserving them.

One must preface any discussion of the surgical treatment of chronic non-specific ulcerative colitis by emphasizing the fact that this disease is not properly one which belongs in the realm of the surgeon. However, there is at the present time no rational treatment for the disease, and surgeons are in the position of being able to save many lives by prompt ileostomy. Ileostomy for ulcerative colitis should be performed early in the disease, because late in the disease it may fail to preserve life and, in any event, the colon will already have been damaged beyond any hope of redemption. In a small group of cases, after early ileostomy, the colon so far recovers that there is some reason to suppose that a restoration of continuity of the bowel may reasonably be attempted. In these cases it is feasible to restore the continuity of the bowel with reasonable hope of success although it is necessary to anticipate a definite incidence of failure with eventual restoration of the ileostomy. In the next most successful group are the patients in whom the disease is apparently arrested so that there is little or no discharge of blood or pus from the retained colon. Although the bowel remains grossly deformed, such patients gain weight, show marked changes of personality for the better, with apparent arrest of the disease and a remission of all symptoms. In them, total colectomy is not required unless one wishes to run the involved risk in order to do away with an abdominal ileostomy. In another group of patients, although the disease itself is quiescent, it is replaced by something almost as hazardous—a polypoid degeneration of the colon. This development of pseudo polyposis, the so-called "colitis polyposa" of the old German pathologists, carries with it a predictable incidence of cancer in the retained colon in excess of 14%. Furthermore, it has been the sad experience that cancer which develops in such patients is likely to be neglected because of the similarity of the symptoms to those of the original disease. Few, if any, of these patients can be cured of cancer by the time it is recognized. A small number of such patients have been cured of a cancer which was discovered accidentally in the course of a total colectomy for ulcerative colitis. Once pseudo polyposis has developed, we feel strongly that a total colectomy is urgently indicated, and, again, the only question is whether an abdominal or an anal ileostomy is to be performed. In a still less fortunate group of patients, the symptoms of colitis continue unabated or only mildly improved after ileostomy, and the persistent discharge of blood and pus, the continuation of fever and cachexia indicate the necessity for colectomy.

After ileostomy and before deciding upon definitive treatment of the remaining colon, it is well to re-evaluate the status of the colon by repeated barium enemas. There are two small groups of cases of atypical colitis which offer a special and improved prognosis. The first of these is right-sided colitis, a group of cases which were recently recorded by Garlock of the Mt. Sinai Hospital in New York. In these patients, the disease is sharply limited to the right side of the colon—quite unlike the ordinary type of ulcerative colitis in which the disease is most severe in the rectum and sigmoid. In this special group, a right-sided resection with anastomosis between the ileum and the left side of the transverse colon can be successfully achieved. In another and much smaller group of patients with left sided colitis, there is a sharp delimitation of disease in the left colon, ending abruptly in the middle of the transverse colon. We have two such patients in whom it was possible to close the ileostomy and perform a transverse colostomy resecting the distal colon. One of these patients, the wife of a physician, has recently gone through an uncomplicated

pregnancy. Her colostomy is perfectly controlled by irrigation and she now wears no bag or apparatus. In the other patient, we have extrapolated a loop of ileum, anastomosing the proximal end of the loop to the transverse colon and the distal end of the loop to the anus in the fashion to be described below.

The procedure which we have employed is based upon the fact that in both of the conditions for which total colectomy is indicated, there is no need to remove the anal sphincters or the muscular coats of the rectum. The operation is devised to permit a total colectomy in a combined abdomino-perineal operation. In the perineal phase, only the mucosa and sub-mucosa of the anal canal and lower rectum are removed until one passes above the levator ani muscles. In patients with polyposis, we have performed the entire operation in one stage—that is to say, total colectomy and ileostomy, bringing the ileum down to the anus by this technique. Patients with ulcerative colitis will tolerate total colectomy in one stage without any difficulty. If the presence of anal fistulae or sinuses or emotional instability of the patient contraindicate an anal ileostomy, we have had no hesitation in performing a total colectomy with an abdomino-perineal excision of the rectum in a single stage. However, if the colon is so severely diseased that total colectomy is certainly required, the patient with ulcerative colitis can not conceivably be a candidate for the procedure until a preliminary abdominal ileostomy has permitted a partial recovery from the effects of the disease. In the patients with ulcerative colitis, therefore, abdominal ileostomy has been performed in every case, as a preliminary to the total colectomy and anal ileostomy.

Preoperatively, the patients are prepared with sulfasuxadine given by mouth and with sulfasuxadine instilled into the distal loop of the colon through the abdominal mucus fistula. Before operation, an indwelling intestinal tube is passed down into the terminal ileum. At operation, the patient is draped in the combined lithotomy-Trendelenburg position so that the abdominal and perineal phases of the operation can be conducted simultaneously by two teams without redraping. The colon is resected in the usual fashion, except that in the pelvis one may cut much closer to the bowel than would be proper when dealing with carcinoma. The resection is carried down from above to the levator ani. The ileum is then liberated from the abdominal wall and considerable time and effort are devoted to lengthening its mesentery by such sacrifice of vessels as may be necessary to permit the bowel to reach the anus. The procedure here is comparable to that by which one is able to bring a loop of jejunum up to the neck for an ante-thoracic esophagoplasty. In the perineal phase of the operation, a circular incision is made at the muco-cutaneous junction and a tube of mucosa and sub-mucosa dissected up until one is above the level of the levator ani. This tube of bowel is then pulled down through the lumen of a proctoscope which is thus passed up as a hollow cylinder between the layers of the wall of the rectum. The mucosa and sub-mucosa are inside it and the muscularis outside it. An assistant, from above, is then able to make a circular incision on the end of the proctoscope cutting through the outer muscular layers. This permits one to deliver the specimen consisting of the colon and the mucosa and sub-mucosa of the rectum, leaving intact the anal sphincters and the muscular coats of the rectum up to or a little above the levator ani muscles. The ileum is now passed down through this muscular tube and sutured in place by three rows of sutures. The first row of sutures is a continuous 00000 catgut suture between the upper end of this muscular cuff and the outer coat of the ileum. The second row is of interrupted silk sutures between the external sphincter and the outer coats of the ileum. The third row consists of fine silk sutures placed through and through the end of the ileum and the anal skin.

The operative procedure itself does not seem to impose a severe strain upon the patients but the post-operative course has often called for the exercise of a great deal of fortitude on their part. Whereas some patients have had creditable degrees of sphincter control within a period of weeks, others have gone six months or more before attaining any degree of comfort in that respect. Furthermore, during the period of adjustment, there may be severe abdominal cramps and burning of the perianal skin by the diarrheal stools. Because patients with ulcerative colitis almost invariably have severe underlying personality difficulties, we have felt it important to be extremely careful in selecting these patients and many of them have been rejected, as far as this operation is concerned, because it has been felt that they might not be able to tolerate the discomfort involved in the period of adjustment. The effect of

personality problems is particularly demonstrated by our second patient who made a very rapid return to complete continence and well-being and continued in this state for several months until her small son was taken ill with hydro-nephrosis due to an abberant renal artery which necessitated a nephrectomy. She began at once to have a severe diarrhea which ceased only when the boy recovered his health. Since then, she has had several other severe bouts of annoying diarrhea, apparently associated with other personal crises.

We have now performed this operation eleven times. There has been one death, in a patient who developed a slough of the terminal ileum and a pelvic abscess necessitating restoration of the abdominal ileostomy through which she proceeded to have an uncontrollable watery diarrhea which finally produced a chemical disequilibrium which was ultimately impossible to combat. A second patient developed a slough of terminal ileum but ultimately recovered although the scarred anal canal prevented his becoming continent so that his abdominal ileostomy has been restored. In this instance the resected rectal segment had undergone a polypoid alteration so that there was a net gain. In one other patient an ileo-vaginal fistula developed, necessitating a temporary abdominal ileostomy which has not yet been closed. The remaining patients are in various stages of rehabilitation. Our first patient remains the most successful. He was operated upon more than 2-½ years ago and when he began to acquire bowel control six months after operation he rapidly gained some 60 pounds of weight, went to work and has been fully employed in responsible capacities ever since. At times, he has had only one formed stool a day, and at others he has had three or four only semi-formed stools in 24 hours. His diet is unrestricted. Most of the other patients are improving progressively and appear likely to achieve a result which will be satisfactory.

SUMMARY

In familial polypoid adenomatosis of the colon, a total colectomy is required to prevent the occurrence of cancer. In chronic non-specific ulcerative colitis, under varying sets of circumstances, total colectomy may also be required. In performing colectomy for these conditions, it is possible to preserve the anal sphincter and the muscular wall of the anal canal and rectum so that the ileum may be anastomosed to the anal skin with the preservation of sphincter function and fecal continence.

Floral Eponym

JEFFERSONIA

THOMAS JEFFERSON, 1743-1826

THOMAS JEFFERSON, the third President of the United States, was interested in all fields of knowledge. He was especially noted as a horticulturist and for his theoretical knowledge of medicine and was instrumental in introducing vaccination into this country. (Halsey, Robert Hurtin, How the President, Thomas Jefferson, and Doctor Benjamin Waterhouse established vaccination as a public health procedure, N.Y. 1936.)

Jeffersonia are perennial herbs native of North America and Asia. J.diphylla, commonly called the twin-leaf or rheumatism root, is the only species in cultivation.

FEVER: A COMMON SYMPTOM IN CARCINOMA OF THE STOMACH*

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Fever as a symptom of carcinoma of the stomach was frequently referred to in the literature of several decades ago[1,2,3], but today this symptom is often overlooked and it is not even mentioned in some of the current textbooks. It is the purpose of this communication to call attention to this manifestation of gastric carcinoma and to show that it occurs in a fairly high percentage of the patients seen by the clinician.

Method of Investigation.—This paper is the result of a detailed study of the case histories of 69 patients during 81 admissions to the Medical College of Virginia Hospitals in the years 1940 to 1948. All cases were diagnosed either by positive x-ray findings; by gastroscopy or esophagoscopy; by operation, with or without pathologic verification; or by autopsy. The cases were divided into 4 groups as follows:

1. Those showing no fever at any time.
2. Those with fever accounted for by infection, anemia, pyrogenic reactions, or other causes than neoplasm.
3. Those with fever of doubtful origin, i.e., accompanied by increased white blood counts but without other evidence of infection.
4. Those whose fever could be ascribed to no other cause than neoplasm.

Any oral temperature of 99 degrees Fahrenheit or above was considered as fever in this series. The temperature curves studied were restricted to the pre-operative period in order to eliminate fever due to post-operative reactions or infections. When patients were not subjected to operation, the complete temperature chart was considered.

Admission temperatures were not used in calculations in order to eliminate psychogenic causes in so far as was possible. Where isolated fever recordings could be attributed to transfusion or pyrogenic reactions, these were eliminated from the evaluation of the curve. Since fever may be associated with pernicious anemia, the single case in this series had his fever ascribed to the blood dyscrasia and was placed in group 2, even though he had been treated with liver extract for several months prior to admission, and his hemoglobin was 59%, with a red cell count of 4 million on entry. Since "severe secondary anemia, as from chronic blood loss, is not a cause of fever",[4] this was not considered a pyretic factor here, although most of our patients did have hypochromic anemia.

At first, it was arbitrarily decided to place all patients with admission white counts of over 10,000 into the group having fever of infectious origin (group 2). However, some patients with counts in this category had no fever, and were accordingly placed in group 1. Others had counts such as 10,100; it was felt that such counts were within the limit of the error of the technique, and hence, in the absence of other conditions causing fever, these patients were placed in group 4. When increased white counts were associated with definite evidence of infection as in peritonitis or bronchopneumonia, they were placed in group 2, those with fever of known basis.

There remained, however, a number of patients with elevated white counts who had neither urinary or respiratory tract infection nor other pyretic pathology. It is believed that these patients had elevated white counts as a result of the neoplastic process itself. "Malignant neoplasms may cause leukocytosis when the neoplasm is growing rapidly. When the liver, gastro-intestinal tract or bone marrow is involved, the count may be exceptionally high".[5] These patients were put into group 3; that is, their fever was considered of doubtful origin, most probably carcinomatous yet possibly infectious. In view of the fact that leukocytosis is an accepted pathologic phenomenon of gastro-intestinal carcinoma, it is our belief that these cases actually belong in group 4.

Dehydration was another factor which was considered. However, few of the patients were severely dehydrated, those with dehydration were promptly

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corrected by intravenous infusions, and there were no fever curves which returned to normal and remained so after dehydration was overcome. Other causes of fever such as central nervous system diseases, heat stroke, heart failure, thyroid disease, liver disease other than metastatic liver disease, paroxysmal tachycardia or cutaneous abnormalities were not present in the patients studied.

Drug reactions may be manifested by fever. Among the drugs known to cause temperature elevations are the sulfonamides, iodides, morphine, barbiturates and belladonna. Antibiotics were not administered unless infection was present and the fever was then attributed to the latter. Iodides were given to two cases with coexistent syphilis, carcinoma being proved subsequently by gastroscopic examination or post-mortem. Both cases were placed in group 4 because both had exhibited fever for several days before the medication was administered (cases A19763 and 32317, 1st admission). Morphine was given to many of the post-operative or terminal patients, but post-operative charts were not studied, and the number of terminal cases with fever unrelated to other causes was relatively small. Of our 17 terminal cases, five had no fever during the period studied. Twelve of them had elevated white counts; 8 were placed in group 2 because of infection; 2 were placed in group 3, and 2 in group 4. The two cases in group 4 received codeine rather than morphine. Barbiturates and belladonna were given to practically all the patients at some time, and the possibility that fever resulted from the intermittent administration of these agents is conceded. Because the incidence of drug fever is relatively low, we feel that it has not greatly influenced our statistics.

GROUP 1. PATIENTS WITHOUT FEVER.
TOTAL—12 (14.81%).

Case Number	History in months	Days observed Pre-operatively	Metastases	Comments
B18160	¾	5	Present	
A29218	2 (?)	3	None found at operation	Anaplastic CA with ulceration.
42527	¾ (?)	2	Present	
A20903	11	4	Present	Terminal Case. WBC 13,500. Mucosa intact.
31660	3	13	Present	Metastases to liver.
A28391	¾	7	Present	Terminal case. Mucoid carcinoma with ulceration. Auricular fibrillation. Post-operative wound disruption.
A23672	24-36 (?)	2	?	Terminal case.
85555	1	4	?	Tumor at cardia diagnosed by esophagoscopy.
82836	2	1	Present	
85641	3	3	Present	
79614	12	5	Present	Terminal case, with broncho-pneumonia and 19,000 WBC.
B32466	4	2	Present	Terminal case, second admission. WBC 12,750.

RESULTS

Of the 81 admissions studied, twelve (14.81%) had no fever during the period studied.

Twenty cases had fever ascribable to infection or other cause than neoplasm. Group 2 therefore comprises 24.69% of the cases in our total series. In this group, fifteen had white counts above 10,000 while 5 had normal counts on admission. Of the latter, case B18943 received daily infusions of a protein hydrolysate preparation and the specific dynamic effect of the ingested amino acids might have been a factor in producing his elevated temperature. Case A40005 had a normal count on admission which rose to 18,050 within one week, during which time he had received multiple infusions of blood and glucose. Patient B17952 was in shock from massive hematemesis on admission; his white count rose to 11,000 after four transfusions. Pa-

GROUP 2. PATIENTS WITH FEVER OF INFECTIOUS OR OTHER ORIGIN.
TOTAL—20 (24.69%).

Case Number	WBC on admission	Urine WBC/HPF	Comments
B16961	24,850		Tuberculous lymphadenitis of neck.
B14208	12,700		Pernicious anemia.
B9279	20,800		Perforated carcinomatous ulcer with peritonitis.
A40005	6,800		WBC rose to 18,050 after admission. Intravenous fluids and 2 transfusions.
A37184	normal		Pneumococcal abscess of abdominal wall.
B17952	10,000		In shock from hematemesis on admission. WBC rose to 11,000 after 4 transfusions.
B18943	normal		Intravenous protein hydrolysate probably a factor in producing fever. Also intravenous blood, plasma and glucose.
A31542	13,500	10-12	
A30542	19,600		Terminal case. Abscess of abdominal wall with gastric fistula.
A27595	12,350	"loaded"	
A28381	normal	250-300	Lung metastases.
C57105	12,300	"loaded"	Terminal case.
A3138	16,900	20-25	Terminal case. Arteriosclerotic heart disease.
A28638	20,050	20	Terminal case. Multiple transfusions.
64256	11,000	5-15	Terminal case. Second admission. Jaundiced.
32317	19,000		Terminal case. Perforated carcinomatous ulcer with peritonitis. Bronchopneumonia.
79634	19,000		Thrombophlebitis. Arteriosclerotic heart disease.
79634	12,100		Same as above. Second admission.
87780	12,750	2-6	Admitted for urinary retention.
A11904	11,000	8-12	Avitaminosis. Peritoneal metastases. Internal hemorrhoids. Hypertrophic arthritis.

GROUP 3. PATIENTS WITH FEVER OF DOUBTFUL ORIGIN.
TOTAL—10 (12.35%).

Case Number	Admission WBC	Urine WBC per HPF	Days observed	Number of readings	No. and % of readings above normal		Comments
A9454	13,950	neg.	16	82	54	65.8%	Positive Wassermann: Metastases to mesenteric nodes.
A32622	11,750	neg.	7	22	9	40.9%	Admission WBC 11,750 with temp. normal; WBC to 13,000 6th day with temp. subnormal.
A33910	12,450	3-5	9	31	3	9.6%	
27468	10,650	neg.	3	19	7	36.8%	
A27671	10,400	neg.	2	4	2	50.0%	Ulcerated carcinoma.
A4999	10,300	1-2	19	35	18	50.3%	Ulcerated carcinoma.
84616	13,000	neg.	13	48	33	68.7%	
80309	12,300	neg.	5	25	17	68%	Terminal case. Morphine given.
A4549	12,700	0-1	6	21	1	4.7%	Ulcerated carcinoma.
A1747	20,000	5-10	20	83	35	42.1%	Day after admission, WBC was 10,900 and urine neg.

tient A28381 had 250 to 300 white cells per urinary high power field despite a normal white blood count. In case A3184 there was an abscess of the abdominal wall from which type three pneumococci were cultured; despite his normal white count, an infectious origin for the fever could not be ruled out.

Ten cases (12.35%) were classed as having fever of doubtful origin. Nine of these had white counts ranging from 10,300 to 13,950; their urines were negative for leukocytes; and no definite focus of infection could be demonstrated. Three of these patients were shown to have ulceration in their tumors (see discussion). One case had an admission white cell count of 20,000, with 5-10 urinary white cells, but his blood count was 10,900 and his urine was negative on the second day. He was observed for 20 days, with 83 temperature recordings taken; 35 of these were above normal.

Thirty-nine patients (48.15%) had one or more temperature readings above 99 degrees not ascribable to any known cause except neoplasm. It is assumed therefore that this fever resulted from the malignant process.

Fourteen (35.89%) of these cases had temperatures ranging up to 100 degrees but no higher; 19 (48.71%) had readings up to 101 degrees; 4 (10.25%), to 102 degrees and 2 (5.12%), to 103 degrees. None had fever above 103 degrees.

In these 39 patients placed in group 4, readings were taken two to six times daily, the average case being observed for 13 days and the average number of readings per patient being 44. Statistically speaking, in the average patient of this group, 40.8% of the readings taken during his pre-operative or non-operative hospital stay were above 99 degrees.

DISCUSSION

Our results show that fever is a symptom seen in about 50% of the patients with carcinoma of the stomach. They compare very closely with the figures given by McCrae[6], who observed that fever was present at some time in 74 out of 150 patients. In Friedenwald's series[7], 43% of the patients showed fever at some time during the course of their disease. According to Briggs[8], the incidence is 33.8%.

The type of fever seen in our cases was intermittent rather than continuous. Rises above normal temperature occurred irregularly and were not sustained. During any twenty-four hour period, a typical patient would have several normal readings and perhaps one or two supernormal ones. In some cases fever appeared only once or twice during the course of a week's observation. There was no predilection for either a nocturnal or diurnal occurrence.

Briggs[8] grouped his cases of febrile gastric carcinoma into 3 categories according to the type of fever exhibited: 52% showed isolated temperature rises not lasting more than 24 hours; 36% had intermittent fever lasting from 2 days to 2 weeks, with normal periods between; 12% had continuous fever. In 1923 he reported[9] two cases in whom, as he said, the accompanying fever "assumed the dignity of a major sign and symptom of the disease". Hampeln[10] is credited by him as having been the first to point out that a high septic intermittent fever with chills and sweats, lasting over long periods and simulating malaria, could be caused by cancer of the stomach.

Fever of neoplastic origin is generally thought to be due to a pyretic substance which is released from the cytoplasm of cells invaded by the neoplasm or, perhaps, of neoplastic cells which have outgrown their blood supply[4,11]. The fever may be similar in some respects to that seen after cardiac infarction. Among neoplastic growths, lymphomas, tumors of the kidney, the lung, the liver and the gastro-intestinal tract are said to show the highest incidence of fever. Because infection is so frequently associated with pulmonary carcinoma, it is difficult to evaluate the role of each in the genesis of this symptom. The liver is one of the two main sources of body heat, and the fever which is seen rather frequently in patients with primary carcinoma of the liver may possibly be related to altered metabolism of the organ as a whole as well as to cytoplasmic necrosis.

Since ulceration presents definite evidence of a necrotic condition, many of the older writers felt that the higher incidence of fever in gastro-intestinal carcinomas was related to their greater tendency to become ulcerated. For technical reasons we were unable to make a comparative study of patients with proved non-ulcerating carcinoma of the stomach, ulcerating carcinoma of the stomach, and non-ulcerating carcinoma elsewhere. However, we did survey our charts in an attempt to correlate the presence or absence of ulceration to the presence or absence of fever. It was considered preferable to use operative and pathological reports rather than

GROUP 4. PATIENTS WITH FEVER DUE TO NEOPLASM. TOTAL—39 (48.15%)

Case Number	Sex	Age	Days Observed	Total Number of Readings	Maximum Oral Temperature and Number of Times Observed		Average Temperature and Number of Readings Used		Range of Readings for Average Temperature Determination					Per Cent of Readings Above Normal	Length History in Months	Metastases P= Present	Ulceration P= Present
									Below 99	99 to 100	100 to 101	101 to 102	102 to 103				
A11065	M	77	16	48	100.0	1	98.43	46	38	7	1			17.4	6	P	P
A36031	M	55	9	28	99.0	2	98.04	27	25	2				7.4	1	?	?
A37816	M	64	2	4	99.4	1	98.75	4	2	2				50.0	6	P	Absent
A41835	F	52	10	21	99.2	1	98.11	20	17	3				15.0	12	P	?
B32466*	M	51	9	22	99.8	1	98.58	21	13	8				38.1	2	P	P
B23037	M	65	2	6	99.6	1	98.96	5	3	2				40.0	8	P	?
B18901	F	44	9	50	99.6	1	98.66	49	30	19				38.8	24	P	?
B18794*	M	34	14	76	100.2	1	98.35	75	57	17	1			24.0	3	P	?
B13255*	M	52	13	49	99.4	1	97.90	48	44	4				8.3	13	?	?
B13255†	M	52	11	29	100.2	2	98.4	28	24	2	2			14.3	14	?	?
B15292	M	67	14	40	102.2	1	99.02	38	18	13	6	0	1	52.6	6	P	?
A36192	F	38	2	8	100.0	3	99.6	7	1	3	3			85.7	24	P	P
A27671*	M	51	2	5	99.8	1	98.80	4	2	2				50.0	3	P	?
A32312	F	50	10	34	100.2	1	98.86	33	12	19	2			63.6	12	P	?
A19763	M	66	17	95	101.2	1	99.25	93	33	40	18	2		64.5	2	?	?
62639*	F	44	12	25	99.6	1	98.52	24	21	3				12.5	36	P	P
62639†	F	44	4	14	100.6	1	99.27	13	7	1	5			46.2	48	P	P
A29969	M	67	24	74	99.8	1	98.22	73	60	13				17.8	18	P	?
50466	M	67	7	24	100.0	1	98.51	23	17	5	1			26.1	8	P	?
A2509	M	54	11	30	100.0	1	98.66	29	16	12	1			44.8	8	P	?
A21297*	M	48	11	27	100.4	2	98.35	26	22	2	2			15.4	3	P	Absent
A21297†	M	48	9	21	99.4	1	97.93	20	19	1				5.0	5	P	?
A27524	M	51	7	31	100.4	1	98.8	30	17	11	2			43.3	6	P	?
64256*	M	56	20	45	100.4	1	97.99	44	36	3	5			18.2	6	P	?
77219	M	71	5	18	100.0	3	99.2	17	3	11	3			82.4	5	P	?
32317*	F	32	39	93	100.2	1	98.67	92	58	30	4			36.9	1	?	?
81410	M	51	16	60	101.2	1	98.29	59	46	10	2	1		22.0	4	P	P
A1129	M	45	9	32	99.6	1	98.43	31	24	7				22.6	4	P	?
89705*	M	72	4	21	100.0	5	99.31	20	7	8	5			65.0	9	?	?
83843*	F	70	4	22	100.8	1	99.45	21	2	16	3			90.5	1	None at op.	?
83843†	F	70	4	21	100.4	2	99.32	20	5	10	5			75.0	6	?	?
7528	M	52	40	135	101.6	1	98.41	81	55	20	5	1		32.1	12	?	?
A4549†	M	63	4	21	102.4	1	99.43	20	5	12	2	0	1	75.0	3	P	?
A17225	M	85	60	212	100.8	1	97.90	140	124	14	2			11.4	?	?	?
A15914	F	57	8	18	100.0	1	99.01	17	7	9	1			58.8	36	P	?
B18794†	M	34	25	63	99.4	1	97.81	62	59	3				4.8	6	P	P
29008	M	65	20	55	100.2	1	98.78	54	27	26	1			50.0	12	P	Absent
B9663	F	66	14	38	99.8	1	98.60	37	29	8				21.6	9	P	P
89705†	M	72	16	97	101.0	2	98.26	96	74	10	10	2		22.9	9+	?	?
Average		13	44											40.8	10.3		

*First admission. †Seeond admission.

to rely on x-ray evidence of ulceration. Unfortunately, in 28 of the 39 cases in group 4, either no operation was performed, or the stomach was not opened or removed because surgical cure was deemed impossible. In only 11 cases could the condition of the mucosa be ascertained. Of these, 3 were reported as having intact mucosa, and definite ulceration in 8 was noted, either by the pathologist or the surgeon. In contrast, among our twelve cases having no fever (group 1), ulceration was noted in two. From this, therefore, one can only conclude that fever may occur in the absence of ulceration; conversely, ulceration may occur in the absence of fever. This statement is in agreement with the study made by Briggs[8], who also pointed out that ulcerations in tumors are apt to cause infection of adjacent tissues, and, with this, an increase in the percentage of fevers arising from complications. As he put it, the occurrence of ulceration does not increase the liability to fever except as it produces complicating infections in surrounding structures.

Metastatic lesions, especially those to the liver, have been said to be a factor in the production of pyrexia. The majority of our cases are far-advanced when they present themselves for admission to our ward service; our series, therefore, does not include sufficient cases of proved non-metastatic gastric carcinoma to permit statistical evaluation of the significance of metastatic lesions in the production of fever. Briggs[8] attempted to make such an evaluation under a similar statistical handicap and came to the conclusion that the presence of metastases does not seem to alter the occurrence of fever to any extent.

Friedenwald[7] stated that fever is a late manifestation of the disease, occurring in 25% of the cases during the first 6 months and 74% after 6 months. Brown[12], Hardy[13] and Bockus[14] also state that fever is more common in the later stages of gastric carcinoma. We are unable either to verify or disprove this statement on the basis of the cases available to us for study. In our opinion, there are innumerable unsurmountable difficulties imposed in the way of correlating appearance of fever and duration of other clinical symptoms, both from the view point of obtaining accurate statistics and of making interpretations therefrom.

Among the difficulties which might be mentioned are those related to the determination of disease duration. If the onset is marked by a sudden appearance of nausea, vomiting or other abnormal phenomena, then the patient can usually date the onset accurately. If, however, the disease manifests itself gradually by vague symptomatology, it is much harder for him or the clinician to determine onset. In patients with a history of functional gastro-intestinal symptoms, it is likewise a task to decide exactly when organic symptoms began. The situation is similar in patients with disturbances previously due to chronic alcoholic or atrophic gastritis. Often, with less intelligent patients and with senile ones having memory impairment, it is practically impossible to ascertain onset, and therefore duration, with any degree of certainty.

In addition, there are many other unevaluated factors precluding an attempt to draw any relationship between duration of clinical picture and appearance of the one symptom, fever. Duration of any clinical picture depends on time of appearance of the initial symptom, which, in any one patient may be malaise, anorexia, vomiting, hematemesis or epigastric distress, to mention a few. Each of these symptoms depends on a particular feature of the pathologic lesion, which may be either its location, its macroscopic or microscopic characteristics, or the physiologic abnormalities produced by it, either within the organ from which it originates, the organs or tissues to which it metastasizes, or the entire body itself. If fever is produced, as it is thought, because of neoplastic necrosis, it is hard to conceive why it should have any relationship to the appearance of vomiting, which occurs when the pylorus is obstructed, or to the onset of dysphagia which is dependent upon the development of obstruction at the cardia, or to the appearance of "indigestion" resulting from an entirely different pathological characteristic such as achlorhydria.

SUMMARY AND CONCLUSIONS

The charts of 69 patients during 81 hospital admissions for carcinoma of the stomach were studied in relation to the presence of fever and to its etiology. 14.81% of the patients had no fever; 24.69% had fever associated with infection or other pathological conditions exclusive of neoplasm. 12.35% had fever of doubtful origin; it was probably neoplastic but infection could not be entirely ruled out. 48.15% had fever unrelated to any cause besides neoplasm.

It is concluded that low-grade intermittent fever is a frequent sign of carcinoma of the stomach. When infection is eliminated, it will still be present in approximately 50% of the patients with this disease.

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Reports No Unfavorable Reaction From Arthritis Treatment With Acth.

Two patients crippled with arthritis who have been undergoing treatment with ACTH—one since May 5 and the other since June 6—are experiencing continued relief under maintenance dosages without any serious reactions.

This report is made by Dr. David E. Markson, associate professor of medicine at Northwestern University Medical School, Chicago, in the October 15 J.A.M.A.

The medical profession has been particularly concerned about the possibilities that ACTH (pituitary adrenocorticotropic hormone) may have toxic effects after prolonged usage although its administration brings miraculous and immediate relief to patients suffering from arthritis.

One patient was treated in the Wesley Memorial Hospital, Chicago, for four months and the other for three months. Upon their discharge they were continued on maintenance dosage of the compound and checked at weekly intervals.

"Serious reactions or symptoms from treatment have not been noted," says Dr. Markson. "It would be presumptuous at this point in the investigation of its effect to consider ACTH as a cure for arthritis. However, in my opinion no other agent could have accomplished so much in so short a time. Only the future will give the final answer to the possible dangers from further prolonged treatment with this endocrine substance.

"It has not been considered that these patients are cured of arthritis as they both have continued their maintenance dosage of the compound. In both of the patients, the return to the approximation of their original status was noted when administration of the medicament was discontinued for three days. It is believed that, as in the treatment of diabetes, the maintenance dosage must be continued indefinitely.

"It is believed that ACTH has opened a new approach to the treatment of rheumatoid arthritis, and that the endocrine substance, like insulin in the treatment of diabetes, may keep these patients comfortable and restore them from invalidism to productive, useful lives in their former occupations."

RELATION OF PITUITARY-ADRENAL FUNCTION TO THE RHEUMATIC DISEASES*

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According to Seyle,[1] experimental and clinical observations have shown that, in addition to the specific adaptive reactions such as serologic reactions to specific antigens, muscular hypertrophy subsequent to physical work, proliferation of the epidermis where the skin is exposed to pressure or friction, there are certain physiologic mechanisms which help to raise resistance to damage as such. In these latter reactions the endocrine system plays a prominent part and they occur irrespective of the specific nature of the evocative damaging agents.

The sum of all those non-specific, systemic reactions of the body which ensue upon exposure to stress and strain has been termed by Seyle[1] as the General Adaptation Syndrome. This stress and strain may be psychic or emotional and physical, such as cold, burns, surgery, infection, trauma, and drugs. The syndrome is characterized by a number of morphologic and functional changes. Among the most prominent of these are enlargement of the adrenal cortex with increased corticoid hormone secretion, involution of the thymus and other lymphatic organs, gastro-intestinal ulcers, and certain metabolic changes and variations in the resistance of the organism. If an individual is continuously exposed to stress, the resulting General Adaptation Syndrome evolves in three distinct stages.

Stage 1.—Alarm reaction—sum of all systemic reactions due to sudden exposure to stress to which the organism is not adapted. Some of these phenomena are only passive and represent signs of damage or shock such as hypothermia, hypotension, hypochloremia, hemoconcentration, increased capillary permeability, and depression of the central nervous system; others are manifestations of active defense against shock such as adrenal cortical enlargement, increased corticotropin and corticoid production, hyperchloremia, etc. Usually the alarm reaction evolves in two distinct phases, the phenomena of shock being followed by those of counter-shock.

Stage 2.—Stage of resistance—sum of all non-specific systemic reactions elicited by prolonged exposure to stress and strain to which the organism has become adapted. It is characterized by an increased resistance to the particular agent to which the body has been exposed and this is usually accompanied by a marked decreased resistance to other types of stress. Essential hypertension is said to fit into this stage.

Stage 3.—Stage of exhaustion—represents the sum of all non-specific systemic reactions which ultimately develop as the result of very prolonged exposure to stress or strain to which adaptation has been developed but could no longer be maintained. In this stage there is atrophy and hypofunction of the adrenal cortex.

The adrenal cortex has three main functional types of hormones or corticoids:

1. *Mineralo-corticoids* control inorganic metabolism of Na-Cl-K-H_2O. This corticoid causes urinary retention of sodium and chloride and increased excretion of potassium. The most potent electrolyte regulating adrenal steroid is 11-desoxycorticosterone which has been synthesized and called DOCA. There is no direct way of measuring this corticoid in the blood or urine.

2. *Glucocorticoids* "S" or sugar hormones—control organic metabolism. This hormone causes increased blood sugar level, increased liver glycogen stores, increased conversion of protein to carbohydrate (gluconeogenesis), increased mobilization and utilization of fat, increased renal clearance of uric acid in normal and gouty patients, lysis of lymphoid tissue, and marked decrease in circulatory eosinophiles. Its activity is directly measured by the 11-oxycorticosteroids in the urine. Compounds A-B-E-F of Kendall belongs in this group.

3. *Androgens or Sex Hormones* ("N" hormones)—cause retention of nitrogen and protein within the body and control secondary sex characteristics such as hair, weight, voice, size of clitoris. Activity is measured by the presence of the 17-Ketosteroids in the urine. In the male two-thirds of the androgens come from the adrenal cortex and one-third from the

*Read before the Seaboard Medical Association of Virginia and North Carolina at Old Point Comfort, Virginia, December 8, 1949.

testes; in the female all the hormone comes from the adrenal cortex.

The adrenal cortex contains life maintaining and life saving substances which are increased in the alarm reaction and markedly decreased in the stage of exhaustion.

The theory is that the stress or strain stimulates the hypothalamus, which in turn stimulates the anterior pituitary to liberate adrenocorticotropic hormone or A C T H, which then stimulates or causes hyperfunction of the adrenal cortex and, if the stimulation is prolonged, the adrenal cortex becomes exhausted and results in hypofunction.

To prove this theory you can give A C T H to a normal person and show hyperfunction of adrenal cortex by the presence of oliguria, increased specific gravity of the urine, elevated blood sugar, and impaired glucose tolerance, retention of sodium, excretion of potassium and uric acid, high levels of 11-oxycorticosteroids and 17-Ketosteroids in the urine, and fall in circulating eosinophiles.

Prolonged use of A C T H may cause exhaustion of the adrenal cortical function and reversal of the above findings. The fall in circulation eosinophiles affords the most sensitive clinical indicator of adrenal cortical activity.

On the basis of earlier animal experiments by Long[2] and others it was shown that epinephrine was capable of stimulating an intact pituitary-adrenal-cortical system. It was found that small doses of epinephrine at 6 hour intervals resulted in moderate stimulation of the adrenal cortex as shown by fall in eosinophiles and urine steroid excretion.

Adrenal cortical hyperfunction or corticoid stimulation causes disintegration of lymphocytes with liberation of antibodies from this lymphatic tissue and may play an important role in immunity and allergy since lymphatic tissues store antibody globulins.

In allergic states such as asthma, periarteritis nodosa, hay fever, etc., there is an increase in eosinophiles which is also seen in exhausted state of the adaptation syndrome.

During the alarm reaction, as following surgical procedures, the bleeding and coagulation times are decreased, platelets increased, and fibrin formation accelerated, which may account for the frequency of phlebothrombosis in post-operative cases.

Continuous exposure to certain types of stress or strain such as cold, fright, etc., in rats on high sodium and protein diet and sensitized by unilateral nephrectomy, causes hypertension, periarteritis, hyalinization and inflammation of the renal arterioles and formation of fibrous nodules in the heart which resemble the Aschoff nodules of rheumatic fever. In these animals the adrenal cortex is found to be hypertrophied and the same changes can be produced by A C T H or D O C A. Perhaps in these conditions there is an imbalance of the mineralo-corticoid which takes place under certain conditions of stress, strain, diet and genetic predisposition. The same changes in humans may take place under certain conditions of stress and strain.

Gastro-intestinal ulcers are frequently seen during the shock phase of the alarm reaction as in burns (Curling's ulcer), or in intense emotional excitement (air raid ulcers) as seen during the "blitz" in London.

Adaptation to our surroundings is one of the most important physiologic reactions in life, according to Seyle[1]; he even goes so far as to say that the capacity of adjustment to external stimuli is the most characteristic feature of living matter. It is not unexpected, therefore, that some of the most common diseases of man appear to be diseases of the adaptation mechanism. There is increasingly more evidence to show that the diseases of adaptation play the same important role in pathology as the General Adaptation Syndrome in physiology.

Interest in the General Adaptation Syndrome has recently received a further impetus as a result of investigations suggesting that some of the most important diseases of clinical medicine, such as hypertension, nephrosclerosis, and the collagen disease, may represent by-products of the endocrine reactions which are at play in the General Adaptation Syndrome.

One may wonder why, and doubt that, nature would develop such a defense mechanism which would ultimately defeat its own purpose. However, serum sickness and anaphylactic reactions are excellent examples of essentially useful defense mechanisms which can cause death. In children who have renal failure due to kidney disease, renal rickets develops due to excess parathyroid secretion. The retention of phosphorus, with a subsequent decrease in the serum calcium due to the renal insufficiency, is combated by a compensatory parathyroid hyperplasia in an attempt to elevate the serum calcium.

Yet, this defense mechanism defeats its own purpose since the bone resorption and skeletal deformity results in renal rickets.

Since the previously so important infectious diseases are now largely under control, thanks to the progress in research on antibiotics, even greater stress will have to be placed in the future upon the diseases of adaptation and the wear and tear maladies of aging.

In chronic diseases such as the collagen group, including rheumatoid arthritis, rheumatic fever, periarteritis nodosa, disseminated lupus erythematosus, scleroderma, and dermatomyositis, there is a hypofunction of the adrenal cortex as shown by urinary assay of the corticoid hormones. Thus the organism is in the stage of exhaustion. The collagen diseases are those in which there is a fibrinoid degeneration of the collagen fibers of the connective tissue and the tissue affected determines the complex which results whether it be blood vessels, joints, skin, or heart.

Hyaluronidase is an enzyme which causes breakdown of hyaluronic acid. This acid is contained in the cell membrane and cement substance around the cell and when it is destroyed it results in destruction of the cell membrane. It has been shown that the male sperm and cancer cells contain large amounts of hyaluronidase which enables them to penetrate the ovum and normal tissue cells respectively. Hyaluronidase is used at present clinically to increase speed of subcutaneous infusions.

It has been shown by Opsahl[3], by using the spread of India ink in determining the presence of hyaluronidase in the tissues, that adrenalectomized animals have a greater enhanced spread indicating increased hyaluronidase. The giving of adrenal cortical hormones inhibited the increased spread in the tissues, indicating that the hyaluronidase was reduced to normal amounts. So it is reasonable to assume that in hyperfunction of the adrenal cortex there is a low level of serum hyaluronidase which is a defense mechanism to preserve body tissue as seen in the alarm reaction and in hypofunction of the adrenal cortex or exhaustion stage there is increase in level of hyaluronidase resulting in destruction of body cells. Assuming these premises are true, we can say that the collagen diseases have two things in common; they are, adrenal cortical hypofunction and increased hyaluronidase levels.

The frequent presence of arthritis in various endocrine disturbances such as menopause, myxedema, acromegaly, dwarfism, diabetes insipidus, adiposogenital dystrophy, and eunuchoidism has been observed for some time. Although there has been no definite causal relationship proven between the endocrine diseases and arthritis, the coincidence between these diseases seems to occur more often than one would expect if the disorders were not related.

As a result of observations on the relief of rheumatoid arthritis during pregnancy and jaundice, Hench[4] was impressed by the fact that these conditions were effective in the relief of rheumatoid arthritis in 60 to 90 per cent of patients, whereas, the best other therapeutic measures available, including gold therapy, are equally effective in only 10 to 15 per cent. These results led him to the belief that some substance normal to the human economy was responsible for the relief of rheumatoid arthritis. The occasional temporary remissions that occurred during surgical operations or following anesthesia and certain other stress conditions suggested that this substance might be present in increased amounts during these conditions also. The common denominator was thought to be an adrenal hormone since the above conditions stimulate the adrenal cortex as seen in the alarm reaction. Hench has stated that even though the pathologic anatomy of rheumatoid arthritis is more or less irreversible, the pathologic physiology of the disease is potentially reversible and sometimes dramatically so.

It has become increasingly more difficult to harmonize the bacterial theory of the origin of rheumatoid arthritis with the phenomenal relief of the disease by jaundice and pregnancy. It became easier to consider that rheumatoid arthritis may represent some basic biochemical disturbance.

With these facts in mind, one of the 30 odd hormone fractions of the adrenal cortex was looked for which might duplicate the results of pregnancy and jaundice. In 1948 Kendall[5] isolated one of the adrenal glucocorticoids called Compound E or 17-hydroxy 11-dehydro-corticosterone which was used by Hench[6] and his co-workers at the Mayo Clinic on 14 patients, all of whom had severe or moderately severe rheumatoid arthritis. All patients had "marked" improvement in a few days on daily injections of 100 mgms. of Compound E or Cortisone and relapses occurred in a short time when the drug was discontinued. The improvement was not only

subjective, but marked decrease in the sedimentation rate, increase in hemoglobin, RBC, weight, appetite, euphoria, and serum proteins occurred. First to improve was the muscular and articular stiffness in 48 hours, then the articular swelling and tenderness subsided. Doses less than 100 mgms. daily proved to be insufficient and must be given continuously or a relapse will likely occur.

Identical results are seen with A C T H in doses of 40 mgms. daily. The use of A C T H simply stimulates the adrenal cortex and the patient manufactures his own endogenous Compound E or Cortisone. A number of methods of nonspecifically stimulating the pituitary to increase its A C T H output, and thereby the adrenal cortical secretion, are now being studied in patients with rheumatoid arthritis.

The use of Cortisone and A C T H in acute rheumatic fever has proven to be just as dramatic as in rheumatoid arthritis[7,8]. Not only has there been prompt disappearance of fever, tachycardia, and polyarthritis in a few days, but the sedimentation rate and P-R interval have become normal within two weeks. Much time must elapse before any definite conclusions can be drawn as to the effect of Compound E on rheumatic heart disease, but cardiac muscles and fibrous valves are not very different histologically from skeletal muscles and fibrous tissue. The helpful effect which Compound E has upon the muscles and fibrous tissues of rheumatoid patients, an effect which appears to be more than one of simple analgesia, permits us to hope that cardiac muscles and valves may respond similarly. As stated previously, the glucocorticoids cause a marked increase in excretion of uric acid in both gouty and normal persons. With this in mind, Thorn[7] used ACTH in patients with gout which produced a large increase in urinary uric acid and a prompt fall in the serum uric acid. The clinical improvement was striking and rapid, much more so than with salicylates.

Disseminated lupus erythematosus, periarteritis nodosa and dementia praecox have also been found to respond to Cortisone and A C T H[9]. The dangers of continued A C T H or Compound E Acetate treatment are essentially the undesirable side-effects associated with prolonged high level of adrenal steroids, and these effects will not be known for some time yet.

The beneficial effect of these substances in the rheumatic diseases is a great advance in therapy. The use of adrenal cortical steroids and adrenal cortical stimulants will do much to further research in the diseases of Adaptation which include the collagen diseases, nephrosclerosis and hypertension.

CONCLUSIONS

1. The theory and application of Seyle's General Adaptation Syndrome have been presented and the physiologic effects of the adrenal cortical hormones were discussed.
2. Increased hyaluronidase levels in the serum and hypofunctioning of the adrenal cortex may be the pathologic physiology common to the collagen diseases.
3. Dramatic remissions of rheumatoid arthritis during pregnancy, jaundice, anesthesia, surgical operations, and other conditions of stress led Hench to believe that an adrenal hormone may be responsible for the improvement since all these conditions stimulate the adrenal cortex in the alarm reaction.
4. Compound E acetate or Cortisone and Adrenocortico tropic hormone or A C T H were found effective in producing remissions in rheumatoid arthritis, rheumatic fever, disseminated lupus erythematosus, periarteritis nodosa and gout.

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84 Thirtieth Street.

New Books.

The following are recently acquired books at the Library of the Medical College of Virginia, and are available to our readers under usual library rules:

America's health: A report to the nation.
Bergler—The basic neurosis.
Blackwood—Atlas of neuropathology.
Cole—Operative technic. Specialty surgery.
Coley—Neoplasm of bone.
Fetterman—Practical lessons in psychiatry.
Hall—Psychological aspects of medicine.
Kaplan—Clinical radiation therapy. 2nd edition.
Lemkau—Mental hygiene and public health.
Markowitz—Textbook of experimental surgery. 2nd edition.
Mill—Prescription manual.
Overholt—The technic of pulmonary resection.
Pratt—A year with Osler.
Rennie and Woodward—Mental hygiene in modern society.
Siri—Isotopic tracers and nuclear radiations.
Tangney—Diabetes and the diabetic in the community.
University of Wisconsin—Respiratory enzymes.
Walker—Post-traumatic epilepsy.
Waksman—Streptomycin.

Antibiotic Drug Reported Effective for Whooping Cough and Venereal Disease.

Aureomycin, the golden-colored antibiotic drug, is effective against whooping cough and lymphogranuloma venereum, a minor venereal disease, two Minneapolis doctors have reported.

Recent experimental and clinical studies indicate that aureomycin is effective in whooping cough, Drs. Wesley W. Spink and Ellard M. Yow of the University of Minnesota Medical School said in the December 3 *Journal of the American Medical Association.*

The ulcerative venereal disease also responds favorably to treatment with aureomycin.

Aureomycin appears to be of little or no value in chickenpox and mumps, however, the doctors found.

Warns Against Unwise Use of Cold Tablets.

The Council on Pharmacy and Chemistry of the American Medical Association at a recent meeting warned against indiscriminate use of antihistaminic substances now being widely promoted for prevention and treatment of colds.

"The council recognizes the evidence that has been accumulated relative to such uses but it is not convinced that this is sufficient to warrant the positive statements that are being made.

"Cases already are reported and records show that about one third of those who take these drugs become drowsy or even fall asleep while at work or in occasional cases even when driving cars or operating machinery.

"Experience with these drugs is not yet long enough to know whether or not they are harmless when used over long periods of time. Furthermore, the amounts taken in persistent colds may be definitely beyond what has been established as safe.

"The council expects to publish a careful review of the present status of these products so that physicians who prescribe them may be aware of the possibilities."

X-RAY THERAPY OF NON-MALIGNANT CONDITIONS*

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and
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The value of X-radiation as an effective therapeutic agent in *malignancy* is well known. Even more satisfactory results can be obtained by the skilful administration of roentgen rays in non-malignant conditions. However, there has been reluctance of acceptance of the use of this therapeutic method by the medical profession. This has its roots in certain factors. The X-ray treatment of infections, for example, is highly successful but has been overshadowed by the effectiveness and ease of administration of the sulfonamides and antibiotics. One must also consider that the basic scientific explanation of how X-rays produce their results in treating infections is not completely known. However, when one sees the beneficial effects obtained, one has to concede that the treatment works even though scientists can only theorize about the basis of its action.

Irradiation of living tissue is always destructive whether by X-rays, radium or radioactive emanations. These radiations produce their effects by ionizing the atoms making up the cells. The resultant change in the physiology and biochemistry of the cell causes its destruction.

A great amount of work has been done in studying the effects of the various rays on humans as well as animals. Most of this has been made in connection with studies on cancer and with the manufacture and explosion of the atomic bomb. However, there has been much less experimental work in the field of non-malignant diseases such as sub-deltoid bursitis, plantar warts, keloids, and Marie-Strumpell arthritis. The researches to explain the action of X-rays in infection have yielded the following theories:

(1) Desjardins[1] states that the leucocyte is known to be the cell most easily killed by irradiation. Leucocytes are abundantly present in the region of inflammation. When roentgen rays are applied to the area of infection, they kill the leucocytes and thus liberate large quantities of antibodies and antibacterial enzymes.

(2) Bisgard and his co-workers[2,3] irradiated rabbits both before and after inoculating them with lethal doses of E. coli and diphtheria toxins. X-rays administered before inoculation produced a non-specific antitoxin that protected the rabbits. This was present 24 hours after irradiation, reached a peak in 48 hours, and was dissipated at the end of a week.

(3) Glenn[4,5] showed that rabbits have a significant rise in the phagocytic index after irradiation, which reaches a peak in 48 hours and returns to normal in a week.

(4) Roentgen rays alter the A/G ratio in local tissues, producing a local increase in globulins. Since antibodies are specific globulins, it is theorized that this may make a greater quantity of globulin available for antibody production.[6]

(5) Baylin[7,8] and his co-workers found in experimental feline pneumonia that X-rays to the entire body will definitely shorten the acute phase of the illness if given within 24 hours after onset of the infection. If irradiation is given to white mice 48 hours before their infection with swine influenzal virus pneumonia, there is a significant decrease in mortality.

In the above work one thing is prominent. There is always a time lag of about 24 hours before radiation effects appear. These reach a maximum in 48 to 72 hours and then gradually disappear in about 7 days.

In the authors' present series a large percentage of the cases experienced an analgesic effect with complete relief from pain in 4 to 6 hours.

The literature affords abundant proof of the value of X-ray therapy in non-malignant conditions. Numerous reports are found on the X-ray treatment of subdeltoid bursitis. Consistently the acute cases responded best. Pohle and Morton's results[9] of 84% completely or moderately relieved are typical of all those reported.

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In treating tuberculous adenitis, Hauser[10] reports the results in 87 unselected cases who were followed 8 months to 7 years after therapy. Results were considered satisfactory in 88.5% and unsatisfactory in 11.5% of this series.

The list of articles giving results in treating furuncles, carbuncles, cellulitis, and erysipelas is long. A paper by Pendergrass and Hodes[6] is typical of most of the reports. 70% of all cases were successfully treated and 94% of the patients with lesions of the face responded. There was often an increase in pain and occasionally of fever in the first 4-6 hours after treatment. However, in all cases that responded, fever dropped and pain disappeared in about 18-24 hours. If the infections were treated early, resolution occurred without suppuration. If the treatments were applied somewhat later during the infection, suppuration was hastened. In cases of cellulitis, localization and suppuration occurred. It is recognized that collections of pus must be evacuated.

Harvey and his associates[11] report on the use of radiation in acute post-partum mastitis. The presence of fever, local tenderness, and erythema of the skin were prerequisites for the diagnosis. No abscesses developed in 86 such breasts treated in patients who had not yet left the hospital after delivery. Most of these cases were seen within 24 hours after onset of the infection. Of 51 breasts treated in patients who had left the hospital, 2 developed abscesses. Both of these were seen more than 72 hours after onset of the mastitis. As a control series, 10 patients, whose infection began in the hospital, were treated by ice packs, heat or sulfonamides. None of these developed abscesses. Of 7 patients treated this way after discharge, 4 developed abscesses. The authors stress that in patients receiving roentgen treatment, the period of subjective symptoms and objective findings was markedly shortened.

Laing[12] reported 900 cases of subacute sinusitis in children. Of this number 639 or 71% were cured after one course of treatment, and were free of symptoms for at least one year. Another 15% showed moderate improvement. In these, symptoms were ameliorated for at least a year. 14% responded temporarily or not at all.

X-ray treatment of ringworm of the scalp has been recommended by the dermatologists. Levin and Behrman,[13] Lynch,[14] and Lane[15] state that cases caused by microsporon audouini are quickly cured by X-ray epilation, using 300 r to each of 5 fields.

Oppenheimer[16] treated 56 cases of virus pneumonia with small doses of X-ray. There were 45 cures in the 56 cases with the best results in the cases treated early. Powell[17] in 1939, at the time of the introduction of the sulfonamides, reported 104 patients with acute pneumonia who were treated by X-ray, with a mortality of 5%. This was a significant decrease in mortality from the 25% usually obtained at that time. Pendergrass and Hodes[6] had 231 cases of pneumonia treated by radiation with 16 deaths—a mortality of 7%.

Marie-Strumpell arthritis of the spine is one of the few of the arthritides that have been successfully treated with X-rays. Freyberg[18] reported his results in 52 cases. 13 cases were classified as early and showed only sacro-iliac involvement in the roentgenogram. Of these 92% received excellent symptomatic relief of pain and objective relief of stiffness. 19 cases were moderately advanced and showed incomplete calcification of the spinal ligaments in addition to the sacroiliac involvement. Of these 68% improved symptomatically and 37% objectively. 20 cases were far advanced, and in these 65% showed symptomatic improvement and 35% objective improvement. Freyberg concludes that roentgen therapy is the most dependable means of relieving the discomfort of this disease.

The use of radiation in treating hyperplastic nasopharyngeal lymphoid tissue as advocated by Crowe and Burnam[19] has found ready acceptance among the nose and throat specialists. They have used only radium or radon for local application. However, the same beneficial results have been obtained by the use of X-irradiation. Neuhauser and Ferguson[20] treated 38 patients with conductive deafness with X-rays. Only 16 cases had completely satisfactory follow-up. In two the response was not satisfactory. One of these had nerve deafness and the other was psychoneurotic with complaints of deafness that could not be evaluated. The other 14 showed definite improvement with 12 cases having an excellent response. The use of X-rays has certain advantages over the use of radium: (1) the necessary equipment is available in smaller hospitals and communities as well as in the large

centers; (2) usually only two treatments are needed; (3) it is not necessary to subject the patient to nasopharyngoscopic procedures and instrumentation to obtain completely satisfactory results; (4) sedation and anesthesia are not necessary. The latter two reasons are of especial importance in treating children.

The above does not exhaust the list of non-malignant conditions amenable to X-ray treatment. Other conditions are: fungus infection of the feet and hands, human bite infections, gas gangrene, herpes, otitis media and mastoiditis, parotitis, thrombophlebitis, various dermatitides, pruritis ani and vulvae, hemangiomata, giant cell tumors, and uterine fibroma.

During a period of a few months 70 patients have received roentgen therapy in the Baltimore City Hospitals for 19 different non-malignant conditions. These have been: acute dento-alveolar abscess, sub-deltoid bursitis, plantar warts, tuberculous adenitis, furunculosis, keloids, non-tuberculous adenitis, infected calluses, osteomyelitis, large thymus glands, post-partum mastitis, cellulitis, acute sinusitis, fungus infection, bronchial asthma, eczema, indolent ulcers, Marie-Strumpell arthritis, and bleeding nasal septum.

As a rule cases have been referred to the X-ray department as a last therapeutic resort. In spite of this, results have been good. The following cases are illustrative:

(1) A 32-year-old white male was referred from the accident room where he had presented himself "to have an operation to relieve the pain" in his left shoulder. He gave a history of a chronic bursitis of 8 years duration. On physical examination the patient was unable to move the left arm or shoulder without marked pain. He had difficulty in undressing for the examination because of the exquisite tenderness present in the subdeltoid area. The skin was hot and erythematous; there was soft tissue swelling present; and X-ray films demonstrated a large amount of calcium deposited in the subdeltoid bursa. Deep therapy was administered through two portals (A.P. and lat.) 15x15 cms., every second day for three times, using 200 KV, 20 ma, 50 cm. TSD., ½ mm. Cu and 1 mm. A1, HVL of 1.2 mm. Cu. 75 air r per portal.

After the second treatment the patient noted improvement and had a marked increase in shoulder motion. Two weeks after starting treatment the patient was asymptomatic. Films made 6 weeks later showed almost complete resorption of the calcium deposits. A second course of therapy was given in the hope of further resorption of the remaining calcium.

(2) A 5-year-old white girl was admitted because of furuncles of the nose of one week's duration. In spite of hot soaks and penicillin the lesions progressed. On physical examination there was a cellulitis of the entire nose with a furuncle at the tip. The nose was exquisitely tender and there was marked edema on the right. The patient received 5 treatments of 50 r daily, using 135 KV, 10 ma, 3 mm. Al, at 30 cm. TSD through a 4 cm. diameter portal directed to the lesions. By the end of the fifth day the furunculosis had completely subsided.

(3) A 28-year-old white female was admitted to the tuberculosis division March 1, 1947, with minimal pulmonary tuberculosis and tuberculous adenitis, left cervical and left axillary. The diagnosis had been established by biopsy of one of the axillary nodes. The patient, when seen by us in March, 1947, was undernourished, and showed hard, non-tender fixed nodes in the left supraclavicular region. There was a draining sinus in the left axilla, together with enlarged, matted, fixed palpable nodes. Roentgen therapy to the left supraclavicular region and to the left axilla was begun March 7, 1947, giving 100 r in air to each field approximately once a week for a total of 800 r in air to each field. The factors used were 200 KV, 0.5 mm. Cu. 1 mm. Al added filter, 20 ma, 50 cm. TSD, HVL 1.2 mm. Cu. The nodes in the neck and axilla gradually decreased in size. After three months the nodes in the neck were small, hard, and fibrotic. The sinus tract in the left axilla was healed and the nodes were small and fibrotic. Serial roentgenograms of the chest showed the lesion in the lung to be stable and the patient was discharged 8-5-47. She had gained 32 pounds in weight.

(4) A 37-year-old former boxer had been admitted with a history of arthritis since 1937. Involvement of the spine began in 1939 and had been progressive with marked fixation and increasing pain. When first seen in the X-ray department for therapy in 1946 the patient was invalided and unable to walk. He could stand for only short periods. Roentgenography showed osteoarthritis of the Marie-Strumpell type involving the lower lumbar vertebrae, hips, knees, and ankles. Deep X-radiation was given to the painful areas of the spine through two 10x15 cm. portals, using 200 KV, 50 cms. TSD, 20 ma, 1 mm. Cu. and 1 mm. Al, HVL 1.68 cu. 100 r per portal, twice weekly for a total of 1000 r per portal. One week after starting treatment the patient stated he had much less pain over the spine and greater freedom of motion. Three and one-half weeks after initiating therapy the patient stated he got out of his chair and shadow boxed for 20 minutes. The patient remained free of pain for about 3 months and had greater freedom of movement during this time but finally the symptoms gradually recurred. (NOTE: All doses listed above are measurements in terms of "Air Dose.")

The results of treating the 70 cases of non-malignant conditions with X-rays are outlined below (See Table 1).

RESULTS

Diagnosis	Good No. Cases	Fair No. Cases	Poor No. Cases (No result)	Total
Acute dento-alveolar abscess	17	0	1	18
Subdeltoid bursitis	4	4	0	8
Plantar warts	6	0	0	6
Tuberculous adenitis	4	0	1	5
Furunculosis	5	0	0	5
Keloids	2	2	0	4
Non-T.B. adenitis	3	0	0	3
Infected calluses	3	0	0	3
Osteomyelitis with draining sinuses	1	0	2	3
Large thymus	1	2	0	3
Post partum mastitis	1	1	0	2
Cellulitis	1	0	1	2
Acute sinusitis	2	0	0	2
Fungus infection	1	0	0	1
Bronchial asthma	0	0	1	1
Eczema	1	0	0	1
Indolent ulcer	1	0	0	1
Marie-Strumpell arthritis	0	1	0	1
Bleeding nasal septum	1	0	0	1
Total	54	10	6	70

TABLE I

SUMMARY

(1) Theories concerning the action of X-ray therapy on infections as well as a review of the recent literature concerning the use of X-rays in treating non-malignant conditions are presented.

(2) Seventy patients with various non-malignant conditions were treated by small doses of X-irradiation. Of these, 54 responded well, 10 had slight benefit, and 6 had either poor or no results.

(3) X-ray therapy is of real value in the above listed conditions and should be more widely employed.

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CORRELATION OF APPENDICITIS AND OXYURIS VERMICULARIS*

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We of the House Staff have had Dr. Kernodle point out an interesting finding in surgical pathological material at our weekly conferences, namely: the finding of Oxyuris vermicularis in the lumen of appendices. Dr. Liebman and I became interested in attempting to correlate the presence of this parasite and the clinical picture of the case in a sample survey of our own material which has passed through the laboratory. We decided to study all the sections of appendices which were submitted for examination from April 1st, 1948, to April 1st, 1949, and to see if there were any clues to be found from the history, physical findings, or laboratory studies of the cases which might lead to a pre-operative impression of the presence of the parasite.

A few words about the parasite under consideration might be in order before getting into the statistical study of our own material. It is known as Oxyuris vermicularis or Enterobius vermicularis and more familarly as pin worm or seat worm. A survey of 2,100 cases in Washington, D.C., revealed a general incidence of 41% with whites being infected two or three times more frequently than negroes. The highest incidence is in children of school age (50%), pre-school children (35%), and adults (22%). The adult worm lives in the cecum, appendix and ascending colon. The females measure eight to thirteen millimeters, the males two to five millimeters. After fertilization the female migrates down the colon to the anus, loaded with eggs. Some may make nightly trips to the anus to deposit their eggs and retreat to the rectum; others stay out in the anal folds, and others are passed in the feces. It is their movement in the anal area which causes the intense itching. Contact with the air causes the female to deposit her eggs. The eggs contain a partially formed parasite which stays in the egg until swallowed. The mode of infection is either air borne or self contamination by hand. The intense itching caused by the presence of the worms results in scratching with subsequent implantation of eggs under the nail; these are carried to the mouth and so the cycle goes.

Pathologically, the presence of the parasites may cause acute inflammatory changes in the cecum. Opinions are divided as to whether or not the parasite may be the inciting cause of acute appendicitis. Harris and Brown in 1925 found the worm in twenty-two cases out of one hundred and twenty-one appendectomies. Gordon in 1933 found it only in 1.19% of 26,051 appendices. Occasionally it may wander into the female genital tract and cause acute inflammatory changes in the tubes. If they reach the peritoneal cavity, the parasite becomes encysted.

Our survey, as previously mentioned, covers the period from April 1st, 1948, to April 1st, 1949. We obtained and re-examined under the microscope all the specimens of appendices submitted in that period. After examining all the material, the clinical charts were examined in the positive cases, to determine if there were any significant findings obtainable to help in reaching a diagnosis, other than in the use of anal swabbing as described by Hall. The total number of specimens examined for that period was 483. The specimens were divided into two groups: (A) Those in which the appendix was removed by itself and in which the diagnosis of appendicitis had been made clinically. (B) Those in which the appendix was removed in connection with other operative procedures. Those of Group (A) appendectomies only numbered 323. Those of Group (B) numbered 160. The number of positive specimens found containing Oxyuris vermicularis were ten cases. Eight cases were from Group (A) and two cases from Group (B). The ratio then in our survey was ten positive cases in 483 specimens or 2.1% incidence.

It must be realized that this figure may be a low one, because our study of the appendices was limited to from two to five specimens per appendix. It

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may well be that serial sections of these specimens might have revealed some parasites that escaped the microtome blade in our series.

An analysis of our ten positive cases revealed an age distribution from two to twenty-seven years. Three of the cases were below ten years of age. Five were between ten and twenty years, and two were between twenty and thirty years of age. Seven were female, three were male. All the cases were in white persons.

Examination of the histories regarding onset and duration of symptoms revealed one case with symptoms twelve hours prior to admission and one case with symptoms twenty-four hours. One case had colicky pain for two months prior to admission. The past history was negative regarding symptoms of pruritus ani in all cases. Location of pain revealed the following: umbilical or paraumbilical in four cases; right lower quadrant in three cases. The remaining three cases made no mention of pain location. Symptoms of nausea and vomiting were present in five cases. Diarrhea was present in two cases. Examination of abdomen revealed tenderness and pain in right lower quadrant in five cases; tenderness about umbilicus in three cases. Laboratory studies revealed white blood counts ranging from 9,000 to 22,000. The differentials were unrevealing, only two cases revealing eosinophilia, two eosinophils being present in each case. One case had a pre-operative stool examination for ova and protozoa which was negative. The urinalysis were negative in all cases.

We had wondered during our review of the cases whether the presence of eosinophils might not be a clue, but, as seen from the survey, it was conspicuous by its absence. Pain location in the abdomen failed to point the way for a correct diagnosis. The symptoms present were those characteristically found with inflammations involving the appendix and not revealing for diagnosing Oxyuris. It is our impression that the pre-operative diagnosis of Oxyuris is a difficult one to make in the face of a case which presents with the findings of acute appendiceal inflammation. However, it might be arrived at with more assurance in the cases of so-called chronic appendicitis, especially where there is an antecedent history of pruritus. The pain location in these cases is more paraumbilical rather than right lower quadrant.

The diagnosis of Oxyuris can be made most easily, not by examining the feces, but by the perianal technique described by Hall. Fecal smears reveal less than 1% of actual infection, flotation methods less than 25%. The Hall method reveals up to as high as 80% of the infection.

In closing, then, we surveyed 483 specimens submitted to the laboratory from April 1st, 1948, to April 1st, 1949, and found ten cases yielding 2.1% incidence. All were in whites and in the young age group. History, physical examination, and blood counts were not revealing in establishing the diagnosis of Oxyuris infestation.

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Hay Fever Drugs in Epilepsy.

Study of the effect of two widely used hay fever drugs, benadryl and pyribenzamine, on epilepsy shows that benadryl decreases the frequency of seizures of the petit mal form of the disease, according to a report in the September 3rd *Journal of the American Medical Association.*

Petit mal is the less severe type of epilepsy in which the sufferer is dazed for a few seconds at a time. No claim is made by Drs. John A. Churchill and George D. Gammon of the University of Pennsylvania, Philadelphia, who reported on the drugs, that benadryl can be used as a treatment for petit mal at present. The study shows further that both benadryl and pyribenzamine are capable of inducing more severe seizures in patients with certain brain lesions, and that pyribenzamine also increases seizures of petit mal epilepsy.

ANAPLASTIC CARCINOMA OF THE LUNG WITH METASTASIS TO THE SPINAL CORD—Case Report

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A white female, age 40, housewife and textile worker, was admitted to the hospital December 3, 1948.

Chief Complaint:—General weakness and paralysis of both legs. Present illness began with general debility about three or four months prior to admission to the hospital.

Patient gave up her work in the textile mill one year before her illness in order to take care of household duties.

The first subjective symptoms began about three or four months prior to admission with pain between her shoulders, which she had been told was due to neuritis. The patient discharged her duties in the home until the day before her admission, at which time one leg became weak and numb, and the following day, or the day of admission, the other leg became similarly affected.

Family History:—Father and mother both dead. The cause of father's death unknown. Mother had epilepsy and died at the age of 22 with some kind of fever. Grandfather died from cancer of the stomach. This patient was the mother of five children—ages ranging from 3 to 15 years.

Habits:—Patient used snuff freely.

Past History:—Patient had always been rather sickly. Epileptic seizures began at the age of 12 and continued to occur occasionally during her marital life, sometimes with intervals of years between the attacks, the last interval being ten years.

Physical Examination:—Height—5 feet 4 inches. Weight—Present weight 80 pounds; former weight 104 pounds.

Temperature 98.6, pulse 78, respiration 20. Patient was an emaciated female adult, lying quietly in bed, apparently in no distress, the only complaint being inability to move the lower extremities; skin was dry, scaly and evidence of loss of weight; head and neck were essentially negative. Thorax—On inspection, revealed a flat, bony framework. Percussion revealed flatness over left chest in the sternal, infra-clavicular and interscapular regions and dullness over the right lung. Breath sounds over the left lung were absent, and those over the right lung were markedly diminished. Cardio-Vascular System—B. P. 100/50; heart enlarged, but no thrills or murmurs. Arteries—soft, compressible. Veins—no varicosities. Abdomen—scaphoid, no masses; liver and spleen not palpable.

Genito-Urinary — negative; glandular system—negative.

Neuro-Muscular System—There was a general flabbiness and loss of muscle tone, the lower extremities being completely paralyzed. Reflexes were markedly diminished, but not totally absent.

Laboratory Findings: Hbg. 85%; erythrocytes 4,200,000; color index 1.02; sedimentation rate 90 millimeters; leukocytes 6,400; differential count normal. Urinalysis, essentially negative; sputum negative for acid fast bacilli; Wassermann negative.

Anaplastic carcinoma of left lung with metastasis to right lung and spinal cord.

Agglutination Tests: B. typhosus—negative; para A typhosus—negative; para B typhosus—negative; Rocky Mountain spotted fever—negative; undulant fever—negative; B. tularense—negative.

The clinical impression following these studies

was that there was some definite pathology in the left lung. On the following day after admission, X-ray examination revealed a tumor-like mass in the left thoracic cavity extending from the apex to the fourth innerspace. There was a gradual rise in temperature on the ninth day of admission, ranging from 100.4 on the ninth day to 104.2 on the twentieth day, without a corresponding increase in pulse and respiration.

Owing to the marked atrophy and the progressive ascending paralysis and the fact that the patient, having lost the sphincteric reflexes of the bowel and bladder, led us to believe that there must be an obstruction or lesion in the region of the dorsal cord. Patient was removed to X-ray room, where spinal puncture was made. The spinal fluid was crystal clear and not under pressure. Lipiodol was injected into the third interspace; then patient was raised in the upright position for radiographs at intervals for one hour.

The lipiodol did not pass the twelfth dorsal vertebra. After this X-ray examination, it was believed the tumor mass in the left chest was causing pressure somewhere on the cord.

The patient became progressively worse and expired on the forty-ninth day after admission. She did not have any cough or expectoration, neither did she ever complain of pain. She took nourishment and was perfectly rational up to the time of her death. However, her respiration became labored two days before she expired, and she was placed in an oxygen tent. It was decided early in this case that, owing to the large tumor mass in the left thoracic cavity and the cord involvement, X-ray therapy or surgery were contradicted.

Clinical Impression: Carcinoma of the left lung with probably metastasis to the spinal cord.

Post Mortem Examination

The apex of the left lung was completely replaced by a very firm mass of grayish brown tissue, 15 cm. in diameter. The tumor mass weighed 868 grams. The remainder of the lung was collapsed, dark blue in color, and studded with numerous 1.5 cm. large modules. On cut section the great vessels and air passages were patent up the point of obstruction of the tumor mass.

The lower half of the left thoracic cavity was replaced with dark brown gelatinous material. The right lung was filled with 2 cm. firm grayish brown nodules.

The upper portion of the pericardium was smooth and glistening. The arch of the aorta presented a smooth glistening intima. The right and left bronchi and trachea were patent and clean. The esophagus was patent—all of these structures being surrounded by an irregular grayish brown mass of tumor.

The liver, spleen and kidneys revealed both chronic and acute passive congestion with neither gross nor microscopic evidence of metastasis. The bladder presented a wrinkled contracted appearance, the bladder wall being 1 cm. thick.

Two dorsal vertebrae showed tumor mass closely adherent to the anterior body of the vertebrae—a portion of the vertebrae being decalcified. The spinal cord was compressed by a 1.5 cm. mass, blackish brown tissue. It was evident that metastasis to the cord was by direct extension.

Pathological Interpretation: Anaplastic carcinoma of the lung, with metastases to the other lung and lymph nodes and extension around the spinal cord; chronic and acute congestion of the liver, spleen and kidneys; chronic cystitis.

Summary

This case is unusual and interesting in that it did not present the typical text-book picture. The usual local symptoms such as cough, chest pain, dyspnea, hemoptysis, and wheezing were not present. The patient was rational and took nourishment well up to twenty-four hours before her death. Fever and weight loss were the most outstanding of the general symptoms.

Roentgenographic films of the chest were the most helpful means in making a positive diagnosis of bronchogenic carcinoma of the lung in this case, in that a tumor about the size of a large grapefruit was visualized, of uniform density, and involved the upper half of the left lung.

THE EFFICACY OF PUNCH BIOPSY OF THE LIVER

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With the realization that at best liver function tests are only an aid in the diagnosis of liver disease, newer methods have been devised for improved diagnosis. This has led to the development of the punch biopsy and numerous reports have praised this method of diagnosis. With various needles, a block of tissue one to two mm. by one to two cm. can be removed and given to the pathologist for diagnosis. Little discomfort is felt by the patient and the complications of the procedure are few, although the over-all mortality has been twelve cases in the thousands of punch biopsies that have been made.[1] Gilman and Gilman[2] made 500 consecutive liver biopsies without any deaths. This is the largest series of liver biopsies so far reported. The authors state that subsequent to the report, one death, due to hemorrhage, occurred.

This procedure was originated by Baron[3] in the United States and Iversen and Roholm[4] in Denmark. The latter used a trochar 18 cm. long and 2 cm. wide which was introduced into the posterior axillary line in the ninth intercostal space, then into the pleural space through the diaphragm into the liver. They did 160 punctures on 114 patients, but in 38, or 22.5%, they were unable to obtain liver tissue. In one case they obtained pure bile. It is interesting that this patient did not develop any serious complications. Ten of their patients came to autopsy and in five the puncture had left no trace. Baron performed 48 biopsies on 35 patients and had one death due to hemorrhage.

With the advent of infectious hepatitis as a public health problem, numerous reports were published dealing with the disease as determined by the biopsy technique. Dible and his associates,[5] using Iversen and Roholm's technique, made 126 biopsies. Three patients gave evidence of hemorrhage immediately following the biopsy and one died with the autopsy diagnosis of acute liver necrosis. At the same time they reviewed 613 cases which had an over-all mortality of 1%. Hoffbauer[6] collected a series of biopsies and had one untoward accident in which the needle passed through the left lobe of the liver. He, Evans, and Watson[7] emphasized the insight into liver pathology that has developed by this method. They do not believe that the method should be used where suppuration of the liver is suspected. It is claimed that the Vim-Silverman

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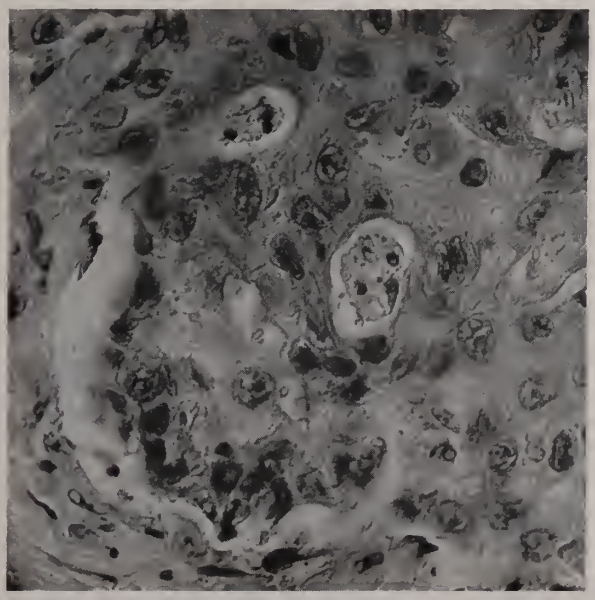

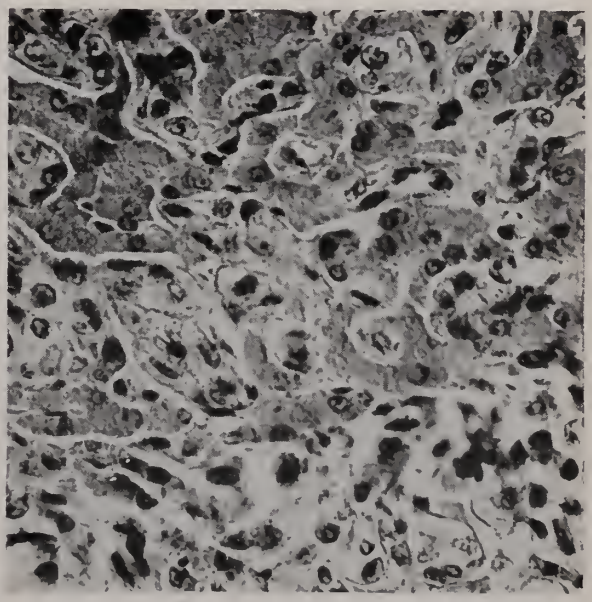

Fig. 1. Autopsy and Biopsy #3. Tumor cells are seen invading the stroma and replacing liver cords. Under higher magnification these are epidermoid in type. X 500.

needle has reduced the incidence of complications, especially the bleeding. Similar claims are made for the Turkel needle. Davis, Scott and Lund made 68 biopsies with the latter needle from 1939 to 1943,[8] and another group from 1943 to 1947,[9] in which the complications have been minimal. There have been similar reports, using various types of needles, by Schmidt and Wells,[10] Bang and Wanscher,[11] van Beek and Haex,[12] and Sherlock.[13]

Although this procedure has been accepted in many clinics as a routine diagnostic method, there has been a lack of investigation of the relation between the tissue removed from biopsy and tissue obtainable by autopsy in the same patient. It is not difficult to understand that diffuse disease of the liver, such as cirrhosis or hepatitis, is readily diagnosed by biopsy. However, one accustomed to the histological examination of the liver realizes that there are focal changes which may be present

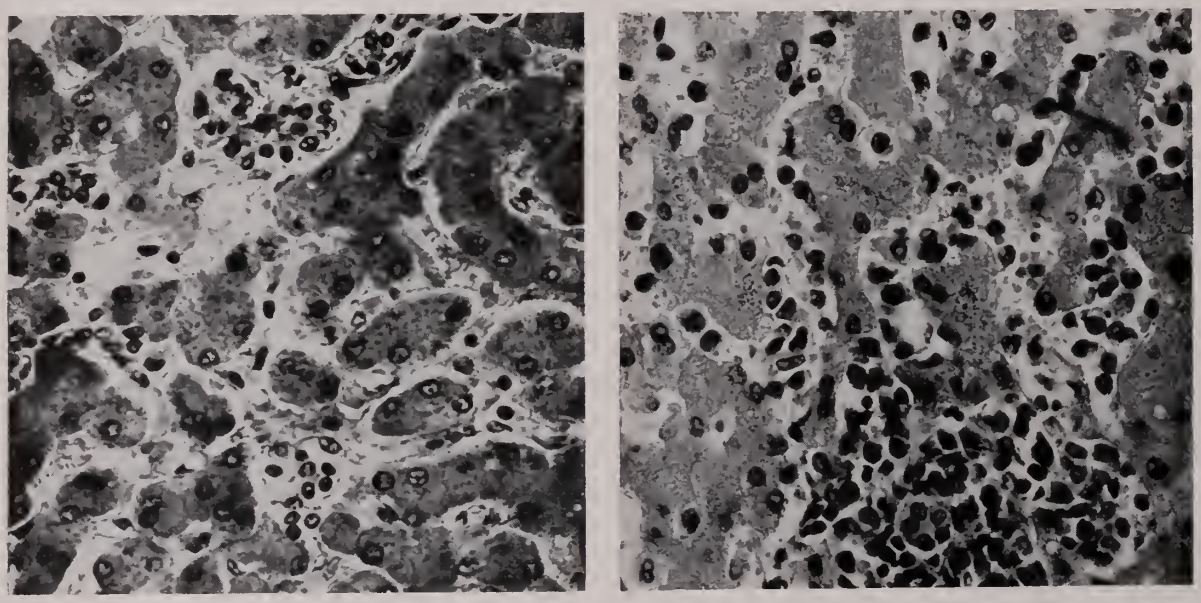

Fig. 2. Autopsy and Biopsy #6. Aggregations of myeloid cells are seen in the sinusoids with resultant atrophy of liver cords. Nodular aggregations replacing liver cords are also present. X 500.

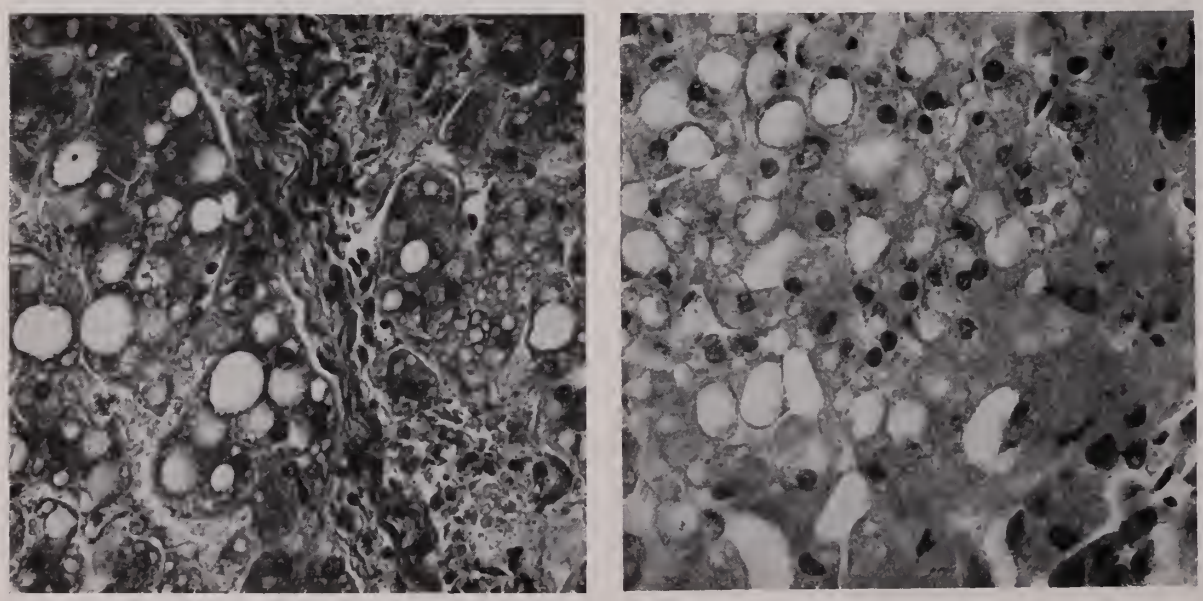

Fig. 3. Autopsy and Biopsy #10. Vacuolization of liver cords is present. Fibrous proliferation with lymphocytic infiltration can also be seen. X 500.

in one lobule and not in adjoining lobules. Metastatic carcinoma is but one example. Since serial biopsies are now being practiced, it would be advisable to know something of the error in the technique. An attempt has been made to correlate liver biopsies with autopsies in the same patient.

Methods: The Turkel needle was used exclusively on consecutive autopsies with the exception of newborns. The method used for the biopsies has been the one described by Davis and his coworkers.[8] The body was placed in the supine position on the morgue slab and after incision of the skin and fascia the needle was introduced into the ninth intercostal space, or subcostally. The plug of liver tissue was removed by rotating the needle and exerting negative pressure. The tissue was placed in formalin, fixed, dehydrated and stained with hematoxylin and eosin. The tissues were examined 24-48 hours after they had been taken and a diagnosis made. Multiple sections of the livers removed at post mortem were compared with the biopsied tissue. A total of sixteen cases were examined.

Results: Table I lists the diverse causes of death. Many of the patients did not have primary hepatic disease, which places significant emphasis on the ability to correctly determine the state of liver tissue by biopsy. There is complete agreement on ten of the sixteen cases examined (3, 6, 7, 8, 9, 10, 12, 11, 14, 16). In the remaining cases there was disagreement in three as to the degree of pathological change, e.g., slight vacuolization against moderate vacuolization. This leaves three cases for analysis. Neither case had significant biopsy findings. In case 2, the autopsy section revealed slight vacuolization; in case 15, the autopsy sections revealed congestion and hyalinized tubercles; and in case 5, the vacuolization was correctly noted but the occasional areas of necrosis were not.

Discussion: As expected, diffuse disease of the liver is readily diagnosed by biopsy, and the only source of error may be in the degree of pathological change. Focal disease (necrosis, tumor, granulomas) obviously may be missed; there were two cases of this nature. However, these lesions were exceedingly minute, and on a section approximately 2 x 2 cm. only three lesions were found in case 5, and only one in case 15. In other cases focal changes were found by this technique where the number of lesions was considerably higher in the routine section.

Criticism because of the small number of cases involved is hardly justified, since we have been concerned primarily with the possibility of erroneous diagnosis in livers that have been proven normal at autopsy. Thus, it is seen that in every liver in which significant pathological changes were not noted at autopsy, the section taken by biopsy tech-

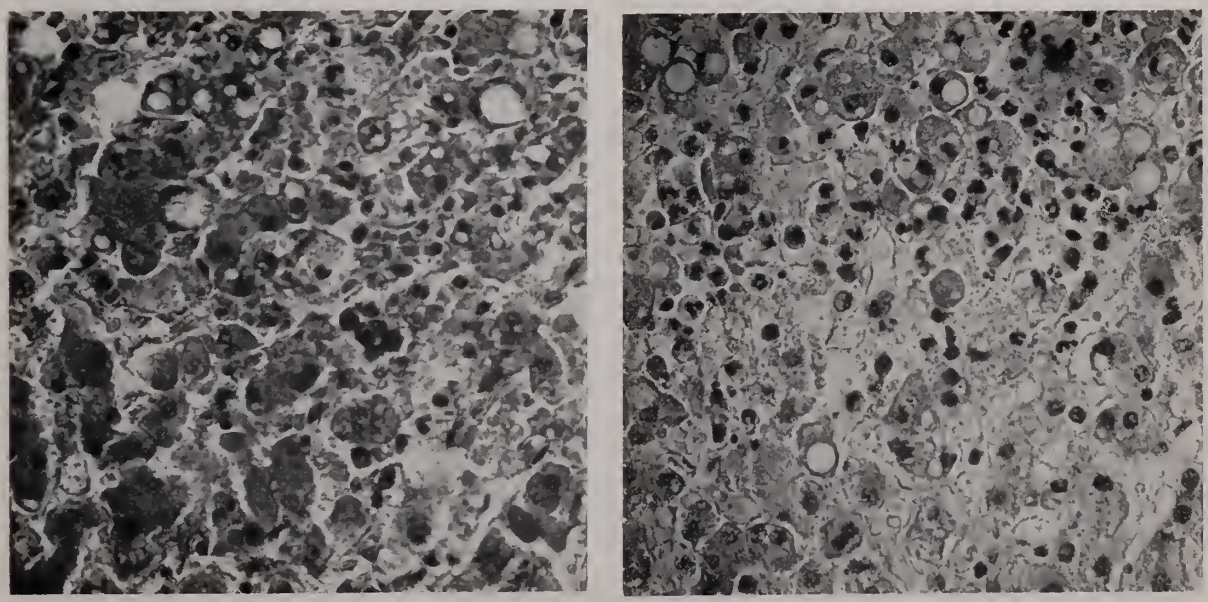

Fig. 4. Autopsy and Biopsy #14. Focal areas of necrosis with slight vacuolization of liver cords and neutrophilic infiltration are seen. X 500.

TABLE I

No.	Age	Sex	Race	Immediate Cause of Death	Biopsy	Autopsy
1	65	m	w	Portal vein thrombosis	Slight vacuolization	Moderate vacuolization. Necrosis in gall bladder fossa
2	4m.	m	c	Osteogenesis imperfecta	None	Slight vacuolization
3	50	f	w	Metastatic carcinoma of cervix	Infiltrating tumor cells	Infiltrating tumor cells
4	39	m	c	Intraventricular hemorrhage	Congestion	Spotty vacuolization. Occasional area of congestion
5	26	f	w	Typhoid fever	Slight vacuolization	Pericentral fat. Focal necrosis
6	24	m	w	Acute myeloid leukemia	Infiltration of myeloid cells	Infiltration of myeloid cells
7	50	m	w	Bronchogenic carcinoma	Congestion	Pericentral congestion
8	66	f	w	Myocardial infarction	Congestion	Pericentral congestion
9	50?	f	c	Arteriolar nephrosclerosis	Friable, soft tissue. Post mortem autolysis	Congestion. Dissolution of parenchyma. Post mortem autolysis
10	88	m	w	Portal cirrhosis	Portal cirrhosis	Portal cirrhosis
11	53	m	w	Perforated duodenal ulcer	Congestion	Congestion
12	35?	m	c	Compound comminuted fracture of face due to shotgun wound	Portal cirrhosis	Portal cirrhosis
13	58	f	w	Partial left coronary occlusion	Slight vacuolization	Moderate vacuolization
14	50?	f	c	Lobular pneumonia	Focal necrosis	Focal necrosis
15	7	f	w	Hemangiomata of brain	None	Congestion. Hyalinized tubercles
16	35	m	c	Dissecting aortic aneurysm and cardiac tamponade	Congestion	Congestion

nique was also considered not significant. Additional cases would not further emphasize this correlation. It is most striking that slight pathological changes such as vacuolization, pigment deposition, and distended sinusoids are easily recognized and, in almost all, properly graded as to the severity. Because of this observation we do not believe that liver biopsy is necessarily reserved for those in whom primary liver disease is suspected. In fact, the correlation of liver biopsy with liver function studies in diseases in which the liver may be secondarily involved may lead to a further understanding of the effects of these diseases upon the liver.

Tripoli and Fader[14] have reported 14 liver biopsies in which 7 were followed by autopsy. There was total agreement in these seven cases. Davis compared 15 cases that were biopsied and then autopsied, and in 12 there had been accurate diagnosis by biopsy. His cases included cirrhosis, carcinoma, and normal livers.

Since the clinical experience with this method indicates that with the Vim-Silverman needle or the Turkel needle the complications are rare, and since the experience of Davis, Tripoli and Fader and our own indicate that the diagnostic aid by this technique is great, we recommend this procedure to further clinical use.

SUMMARY

Tissues removed by the liver biopsy technique are contrasted with the autopsy results in 16 patients.

In ten examinations, there was complete agreement; in three the disagreement was in the degree of pathological change.

In two patients, focal liver lesions were missed, and in another slight vacuolization was not recognized.

These favorable results warrant the further clinical use of liver biopsy as a diagnostic measure.

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50 Plaza Street.

CORRESPONDENCE

A Matter of Professional Ethics.

TO THE EDITOR:

For several years I have been of the opinion that in order to have more and better general practitioners the basic need is to reinstill confidence in the public for the family doctor. The specialist by proper ethics can do more to mold and increase the respect of the public for the family doctor than any one else. This, in turn, will cause young men to become interested in general practice quicker than any medical education program or any governmental interference. After reading Dr. C. C. Coleman's Guest Editorial in December 1949, VIRGINIA MEDICAL MONTHLY, with all of which I heartily agree, it occurred to me that some comments from a general practitioner might be in order.

All of us realize that medical science today is too broad and technical for anyone to be qualified in all fields. For example, the neurosurgeon, chest surgeon, bronchoscopist, ophthalmologist, urologist, orthopedist, internal medical diagnostician, etc., are essential for good medical care but the trained, educated general practitioner is capable of diagnosing and successfully treating 85 per cent of the sick people who seek medical care. Even in cases needing specialist care, the general practitioner can frequently be of assistance to him due to his general experience with the body as a whole and his knowledge of the patient's personal background.

In a revision of the AMA code of ethics I find it stated that the general practitioner should accept the opinion of a specialist as final. The fairer way when there is disagreement as to diagnosis or treatment would be to call in the third party for consultation and give the general practitioner's vote and reasoning equal consideration. I have had patients about whom a specialist disagreed with my opinion to be referred to another center and my original opinion in time to be confirmed. In the meantime, the treatment was changed by the consultant, the patient's condition became alarming before the third opinion was obtained, and the original therapy was resumed only after several weeks of unnecessary prolonged illness.

Dr. Coleman brings out the point of difference in the request for an examination and to take charge of the case. In my opinion, the consultant should not take over treatment except in emergency cases unless he has been specifically requested to do it, and he should advise the patient to return to his family doctor for treatment whenever he is capable. In addition, the consultant should give his instructions for treatment to the family doctor and not to the patient.

Articles published in medical journals by specialists stating the advantages and abilities of general practitioners to treat 85 per cent of illnesses and the necessity for him to have hospital privileges within his individual ability are read only by the medical profession because they are not published in lay magazines. The Public Relations Bureaus of our local, state, and national associations could render an invaluable service by helping to educate the general public along these lines in their publicity campaigns against socialized medicine.

Many times a referred patient is a lost patient forever. The obstetrician turns the baby over to a pediatrician before it leaves the hospital and requests the mother to return to him for her post partum examination; the surgeon requires the patient to return to him for dressings; and the opthalmologist refers the patient to an internal medical man for treatment of hypertension, and so on. After a few years of this, the general practitioner either decides that his lot will be easier if he specializes or else he finds it necessary to do all that he can himself, seeking ethical specialists whenever he needs consultants.

In conclusion, most of the leaders of our profession today declare that to provide adequate medical care free of governmental interference, we must restore the general practitioner to his former place in the profession and in the life of the patient and, to help accomplish this, we need the help of every man of our profession.

J. PAUL KENT, M.D.

Altavista, Virginia
January 4, 1950

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO. B-44758

The patient is a 60 year old white female who was well until two months before admission when she began to have spells of weakness and nervousness and shortness of breath, unrelated to exertion or meals. She also at times noted a sensation of heaviness and pressure in the right lower chest anteriorly which was aggravated by lying on her right side. Her symptoms progressed in frequency and severity until the time of admission. She had had no cough.

The past and family histories were non-contributory.

Physical examination: Temperature 98.4, pulse 88, respiration 20, and blood pressure 160/80. The patient was well developed, but rather poorly nourished and in no distress. The head and neck were essentially negative. The chest expanded symmetrically. There was dulness over the right anterior chest with dimished breath sounds and fremitus. The area of cardiac dulness seemed to be increased to the right side of the sternum. Cardiac examination was otherwise negative. The abdomen was negative. There was questionable clubbing of the fingers, but no cyanosis. The knee jerks were absent. The physical examination was otherwise negative.

Laboratory data: Urine specific gravity 1.010; albumin, sugar and acetone negative; 2-3 WBC and occasional RBC per HPF. Hemoglobin 15 grams, white blood count 9,400, 68% polys, 32% lymphs. Serology was negative. Vital capacity 69% (patient did not cooperate too well). An electrocardiogram showed only a sinus bradycardia with a rate of 54. An x-ray of the chest showed "marked enlargement of the right cardiac margin" with a cardiothoracic ratio of 71%. The transverse of the aortic arch measured 6 cm. (Illustrations Nos. 1 and 2).

1. Photograph of P.A. chest film.

2. Photograph of lateral view of chest film.

Following admission the patient's blood pressure dropped to 120/70, and remained there. She ran no fever. On the sixth hospital day an operation was performed.

*Discussed by Dr. John R. Massie, Jr.**

To summarize the positive findings, we have an elderly female patient, aged 60, who has had spells of weakness and nervousness and shortness of breath, with a feeling of heaviness and pressure in the right lower anterior chest, for two months, and apparently has lost no weight. I take that "undernourished" not to be any recent loss of weight.

Physical findings are essentially limited to the right anterior chest, where there is dulness, and diminished breath sounds, fremitus and enlargement of the right cardiac border are also present. There is a suggestion of clubbing of fingers; otherwise the physical examination is negative.

The laboratory tests are normal except for some decrease in the vital lung capacity and a sinus bradycardia. X-ray shows marked enlargement of the right cardiac margin, apparently due to a tumor-like mass of the anterior mediastinum, as may be shown on the lateral film.

An infectious process seems improbable, with a normal temperature and a normal leukocyte count.

An aneurysm is possible of the descending aorta, but the mass appears more like a tumor on x-ray, and no mention is made of any fluoroscopic studies for pulsation of the tumor; hence, I shall rule out aneurysm.

Encapsulated fluid always has to be considered, but it seems unlikely since it is not in a fissure line.

This leaves only tumors of the anterior mediastinum to consider and, as we all know, there are many such tumors. Malignancy in this location can be of almost any type, including the various forms of sarcoma, Hodgkin's disease, leukemia, carcinoma, and many others. Carcinoma in the anterior mediastinum usually is metastatic, although it can arise from the thymus or pulmonary tissue. The lesion here appears somewhat low for a thymic tumor. The fact that the patient had a normal hemoglobin, has lost no weight, and had a large nicely circumscribed, sharply demarcated tumor in the anterior mediastinum makes me think that it is benign rather than a malignant lesion.

A tumor of the diaphragm is possible, but appears unlikely since the dome of the diaphragm seems smooth in contour and the main bulk of the tumor seems well above it; subphrenic pathology also seems unlikely for the same reasons, and also because the diaphragm is not elevated and the costophrenic angles are clear. Diaphragmatic hernia should be considered, but also is not probable because it seems well anterior to the esophageal hiatus, which is the most usual place. This would be a rather odd location for a hernia since they are variously reported as fifteen or twenty times more frequent on the left side than on the right. Then, too, the patient has had no symptoms of having a hollow viscus incarcerated in the hernia. A herniation through the foramen of Morgagni is possible, but remote.

The next and most likely things to consider are benign tumors, arising in the anterior mediastinum, both solid and cystic, such as dermoids, pericardial cysts, bronchogenic cysts, echinococcus cysts, lymphangioma, lipoma, fibroma, teratoma, thymic cyst, intestinal rests, aberrant thyroid tumor, chondromas, etc.

All of the above mentioned tumors in the anterior mediastinum can cause the same approximate symptoms as occurred in this patient, including a decrease in the vital capacity, nearly all of which are due to pressure. Hence, the symptoms here are of no help in a differential diagnosis between the last tumors mentioned. We have, then, only the appearance of the tumor on the x-ray film as an aid to the exact diagnosis. The sinus bradycardia is probably insignificant; I don't know how it could be explained by the tumor, possibly pressure on the pacemaker or vagus; I don't know about that.

It is too smooth in contour and sharply demarcated to be a lymphangioma. Lymphangiomas are usually multiloculated and irregular in contour, and are densely adherent to all surrounding structures. Echinococcus cyst should be ruled out because of its rarity in this country, and also because the wall of the tumor is not characteristic on x-ray. It is not stated in the history whether or not the patient had ever lived in a country that commonly has echinococcus cysts, and it is noteworthy that most cases found in this country have at one time or another lived in other places.

A thymic cyst is possible and somewhat likely,

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though considered a rare tumor and probably should be located higher in the anterior mediastinum.

A chondroma is a likely diagnosis and could arise from the sternal or costal cartilages, and I can see no evidence on this picture of origin or attachment to these structures.

The exact differential diagnosis between a dermoid cyst, pericardial cyst, lipoma, fibroma, bronchogenic cyst and chondroma seems impossible here, and I believe it to be one of these tumors. It is usually not necessary to make such an exact differential diagnosis pre-operatively since any tumor of this size which causes such symptoms as this patient has had, even though recognized as benign, should be removed surgically regardless of what it is. If it were important to more accurately determine the diagnosis before operation, aspiration of the tumor, provided it is not infected, might be of some help by determining the character of the cyst fluid or tumor cells removed; also by inducing pneumothorax might give some clue as to the origin of the tumor; all this probably is unnecessary.

In order of frequency, a dermoid cyst is probably the most likely diagnosis. On the other hand, cases selected for conferences here are not the most likely things, and because of the general appearance of the tumor and its close proximity to the right pericardium, I am going to make a guess, and it is wholly a guess, of this being a pericardial collomic cyst.

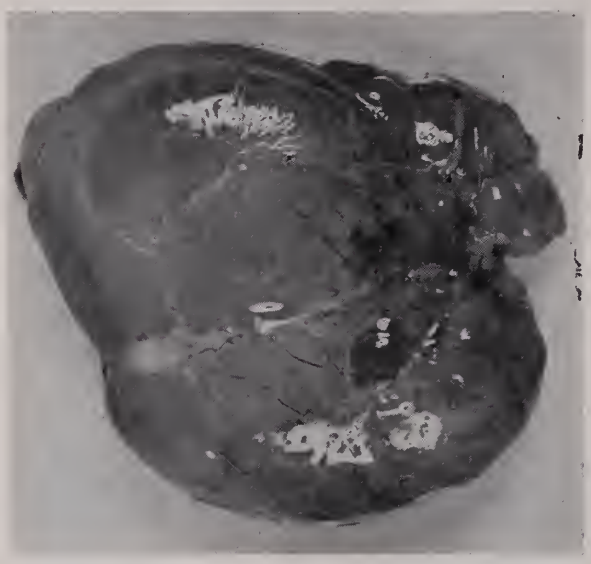
These cysts, of course, are congenital, being a failure of one of the primitive lacunas to merge with the others, resulting in an independent cavity. If this diagnosis is correct, it seems remarkable that a person would wait 60 years for it to become large enough to cause symptoms, and most of them do, and then for the symptoms to progress so steadily in a period of two months. Their relatively sudden increase in size has been blamed on many things; such as trauma, upper respiratory infections, etc. Hemorrhage into the cyst seems entirely possible, following trauma, but the symptoms probably should not have been progressive as they were in this case. It is still one of the unsolved mysteries as to why the cells lining a cyst suddenly, or relatively suddenly, start secreting fluid into the cyst cavity, and I have no adequate explanation—the blood supply probably having something to do with it.

Hospital diagnosis: Pericardial cyst.

Dr. Massie's diagnosis: Pericardial collomic cyst.

Pathology: Discussed by Dr. Thomas M. Scotti.*

The specimen weighed about 317 grams, measured 12½ x 7 x 7 cm. (illustration No. 3). It had an



3. Photograph of specimen as received in pathology laboratory.

extremely thin transparent wall, tissue-paper in thinness; in fact, I don't see how it was ever removed intact. We did not take sections of the cyst because we were requested by the surgeons to keep it intact, and the surgeons were satisfied with the diagnosis of pericardial cyst—and we were too; but, if we had taken a section it probably would have shown just an extremely thin fibrous wall with a single layer of mesothetial cells. That is all there is to it.

Pathological diagnosis: Pericardial cyst.

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PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for December 1949 as compared with the same month in 1948, and for the period of January through December 1949 compared with the same period in 1948, is as follows:

	Dec. 1949	Dec. 1948	Jan.-Dec. 1949	Jan.-Dec. 1948
Typhoid and paratyphoid	4	10	148	136
Diarrhea and Dysentery	196	275	5,870	4,494
Measles	56	1,251	21,392	7,749
Scarlet fever	126	92	861	899
Diphtheria	44	36	220	265
Poliomyelitis	7	11	338	567
Meningitis	5	7	84	94
Brucellosis	4	8	72	82
Rocky Mountain spotted fever	0	0	101	64
Tularemia	10	7	40	57

COMMUNICABLE DISEASE TRENDS IN VIRGINIA AND THE UNITED STATES

In evaluating communicable disease control measures it is well to take periodic inventory in order to determine what new measures should be adopted and what tried measures should be emphasized. The following table lists the reported cases of certain communicable diseases in Virginia and the United States and shows percentage trends in 1948 and 1949:

Inspection of this table shows in the main that the trends in the United States are reflected in the figures for Virginia. The similarity is evident in percentage changes in Diphtheria, Scarlet fever, Influenza, and Typhoid fever. The dissimilarity in the Measles trends is due to the fact that Virginia had her periodic high incidence a year later than the country as a whole.

The significant exception is Poliomyelitis. 1949 showed an unprecedented incidence in this disease in the United States, with 42,375 reported cases—the highest incidence since 1916 and the highest on record. In comparison, Virginia was fortunate, with 337 reported cases in 1949 as compared with 567 in 1948.

In the communicable disease field there is, of course, a wide variation in control programs in the 48 states and the territories of the United States. The extent of immunization programs against preventable diseases varies in emphasis and thoroughness. Despite these individual variations the picture for the nation as a whole, as compared to an individual state (Virginia) has an interesting similarity. This would indicate that factors beyond individual state programs are possibly responsible. The epidemiologist is interested to discover what these factors are. Are they climate, economic conditions, better nutrition and therefore better resistance, or, is it possible that the principles of maintaining health are becoming widespread through education and that from a health standpoint we are really becoming one nation and on the threshold of becoming one world? These are interesting concepts and are especially applicable as geographic boundaries become closer in time and space and the world's perimeter contracts.

MAJOR COMMUNICABLE DISEASE AND PERCENTAGE CHANGE
Virginia and United States, 1948, 1949

Disease	Virginia 1949*	Virginia 1948	Virginia % Change	United States 1949*	United States 1948	United States % Change
Diphtheria	220	265	—17.0	8,039	9,725	—17.3
Influenza	10,078	19,442	—48.2	106,397	175,085	—39.2
Measles	21,392	7,749	+176.1	607,648	604,027	+ 0.6
Poliomyelitis	338	567	—40.4	42,375	27,676	+53.1
Scarlet fever	861	899	— 4.2	74,105	77,924	— 4.9
Typhoid-Paratyphoid	148	136	+ 8.8	3,617	3,592	+ .7
Whooping cough	1,378	2,271	—39.3	68,138	72,956	— 6.6

*Provisional figures.

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Department of Mental Hygiene and Hospitals

Problem of the Feeble-Minded in Virginia

It is the object of this article to bring to the attention of the medical profession of Virginia some of the pertinent features concerning the feeble-minded in this Commonwealth and some that concern the problem as a whole.

Few of us are cognizant of the size and significance of the problem of the feeble-minded (mental defective), and of the urgency on the part of the home, school, community, and State to formulate a coordinated constructive program to meet it. The extent of this problem is not such as to discourage an approach. Yet, the size and the necessary measures to take, demand a constructive organized program.

As to the size of the problem on a national scale, extensive research has indicated that the number of the mental deficients (feeble-minded) is approximately one and one-half per cent of the population or a million and a half of all ages in the United States. Of the 3,950,000 babies born last year, at least 37,000 were feeble-minded. Also, it is estimated that from two to five per cent of the juvenile population of the average American City can be considered mentally retarded. The large majority of these fall into the high grade mental defective and borderline groups. Research also indicates that from two per cent to three per cent of the school population are mentally retarded, and if the borderline group is included, the number may go as high as five per cent.

What does this mean to Virginia? The application of this scale applied to the Commonwealth on an estimated 3,029,000 population is: Feeble-minded of all ages approximately 45,000. Since the ratio of mental level among the feeble-minded is 5:20:75, there are 2,250 idiots, 9,000 imbeciles, and 33,750 morons in Virginia. Feeble-minded in our public schools population of 662,732 (583,729 actually enrolled) would be 6,627 on a conservative estimate.

Where are the feeble-minded in Virginia? By far the largest group (seventy-five per cent) the high grade mental defective (morons) are in communities and rural sections. It is estimated that eight per cent or lower of the feeble-minded are institutionalized. The State institutions get the low grades (idiots and imbeciles) and a small per cent of the morons—those who become asocial.

It is not the purpose here to discuss the care and training of the mental defective (See article to follow), however, it is this feature relating to the feeble-minded and mentally retarded juvenile that imposes a social obligation that has not been approached in a constructive way, and places a real liability on the community and state. The humanitarian aspect of the problem tends to overshadow the fact that the great large class of mental defectives (morons) can be trained to fit constructively in our society. This requires the proper approach by an enlightened home, the school, community, and the state. Without supervision and a special or modified program of training this large class of high grade mental defectives show a strong tendency to become social liabilities, drifting into delinquency and crime, prostitution, and some into insanity. They find competition hard and experience many frustrations.

The mental defectives (without psychosis) institutionalized in Virginia are shown below:

Lynchburg State Colony (white)	1692
Central State Hospital (colored)	613
Petersburg State Colony (colored)	250
Total	2555

In these institutions facilities and personnel are inadequate to cope with the load they carry. Dormitories are overcrowded beyond capacity standards, and neuropsychiatrists, as well as other classes of professional personnel, are not available at current salary levels. For a detailed expression of this need see the report of a group of twenty-one laymen, appointed by the Mental Hygiene Society of Virginia, who inspected the mental hospitals; also, the report of Charles J. Duke, Jr., Chief of Governor Tuck's Governmental Reorganization Staff.

While state institutions are prepared to receive feeble-minded children at an early age, most feeble-minded children live at home throughout life. If the child requires more attention than the home can give,

or is an economic burden, or its presence has a deleterious effect on other children, it should be placed in an institution. Few parents know the simple facts about feeble-mindedness, or how they can train and care for their handicapped child. Recently, there has been initiated in communities in some states parent organizations. In these, parents assist one another in their common problem of caring for a retarded child.

Our public schools have observed the necessity of a special or modified curriculum for pupils of retarded intellect. However, effort in this matter has been inadequate in degree as well as in its character.

Community and neighborhood guidance could often give the feeble-minded a job and a chance. The community that does not supervise its feeble-minded is guilty of creating a problem, and sometimes a menace.

At the State level, training schools (our colonies) are intended for children who cannot be trained and cared for otherwise at the local level. In addition to our institutions, community mental hygiene clinics have been established to aid in all matters relating to the care and training of the mental defective as well as to treatment of those suffering from mental illness.

Possessing some knowledge of the problem of the feeble-minded, as members of the Medical Society of Virginia, you can be a great aid in assisting local social, welfare and lay agencies in formulating a constructive program in respect to the "Forgotten Child", the mental defective.

Music in Hospitals.

Doctors are using music in surgery and in treating patients with mental illness, heart disease and a number of other diseases.

How music has assumed a new role as an aid in the operating room and on the hospital ward is told by musician Doris Paul of East Lansing, Mich., in the December issue of *Hygeia*, health magazine of the American Medical Association.

Like many drugs, music may serve as an aid for some and as a detriment to the health of others. It must be handled by the trained therapist if optimum beneficial effects are to be realized by the patient and harmful results avoided.

Billings Hospital in Chicago is chief among the institutions that use music in the waiting room while patients are being prepared for surgery and during their stay in the operating room. The patient is asked whether he likes music and whether he would like to have it during the operation. If the answers are affirmative, he is asked to suggest particular compositions he would like. If the patient is agreeable, and only five out of 177 were not, upon his transference to the operating room earphones are affixed and he goes to sleep to the tune he has ordered.

In the Veterans Administration Hospital at Marion, Ind., music is heard almost continuously in the pack room where treatment is administered to subdue violent patients. Music is loud to match their wild mood as they enter. They are quickly encased in wet sheets and wrapped. The volume of the music gradually is lowered as the yelling subsides, and finally the music is so soft that all in the room must be quiet to hear it.

In the Veterans Hospital in Minneapolis, the music therapist works hand in hand with the psychiatrist in dealing with persons undergoing insulin shock and electric shock.

Cardiac patients whose recovery depends on rest and relaxation are often invited to listen to soothing music—music with no sudden changes in tempo or volume.

In a Milwaukee hospital, a small girl suffering from arthritis that made breathing painful had to be encouraged to increase her lung capacity. Instead of doing monotonous breathing exercises, she was allowed to blow to her heart's content on a harmonica.

MEDICAL SOCIETY OF VIRGINIA
PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Blue Cross—Blue Shield: The Medical Profession's Own Prescription

The progress of medical science and the excellence of care available in modern hospitals astound us; but the bills which follow this care are also astounding and often make a more lasting impression on the patient than does the excellence of the service he receives. The cost of prolonged or serious illness falls heavily on the average family's finances. This causes hardships which frequently breed resentment. Too often the doctor inherits this resentment, while the type of politician who offers "all for nothing" gains an ardent supporter. In view of these well worn facts, it behooves the physician to forget that he has done all that has traditionally been expected of him when he has treated the patient's body and psyche. He must also help the patient find a less painful plan of meeting his financial problem.

To meet this problem, hospitals established Blue Cross and more recently, physicians organized Blue Shield. These plans have gone far toward removing the financial hardship of serious illnesses among their subscribers; but better enrollment must be sesured if these plans are to make their full contribution.

Blue Cross and Blue Shield have achieved phenomenal success with their respective plans through the enrollment of large industrial groups, but since, at about the cost of a package of cigarettes a day, complete coverage for hospitalized illnesses is being supplied to family groups, there is no money for extensive sales forces or door to door selling. Since much of the urban population does not lend itself to group enrollment, and since 65 per cent of Virginia's population is rural, it is obvious that an economical method of carrying the Blue Cross—Blue Shield message to the individual must be devised. This can be done at almost no expense if the individual physician will take an active interest. In one Virginia county, physicians have successfully used the following methods:

1. Enclosed with bills a small folder which points out the advantages of subscribing to these plans. This advertisement carries an invitation to the patient to fill in his name and address on the folder and mail it to the Blue Cross—Blue Shield office for an application blank.
2. Displayed the Blue Cross—Blue Shield calendar in the waiting-rooms, assuring the patient of the physician's interest in these plans.
3. Kept promotional literature and application blanks on the waiting-room tables.
4. Taught office assistants to fill out applications for patients when this is requested.
5. Familiarized themselves with the pertinent facts of the contracts as set forth in brief outline on the promotional literature. (This requires not more than 15 minutes of study.)

This simple, inexpensive method of promoting these plans has resulted in an enrollment unequaled in any other purely rural area in Virginia, and perhaps greater than any in the country, with the exception of those rural areas which have large organized farm groups enrolled.

Many physicians have not helped the prepayment plans because they object to certain features of the contracts or because of conflicts of personalities. Those of us who have worked in Blue Shield and Blue Cross share these objections. We know of more imperfections than the dissenters, but we also recognize the virtues of the plans. We feel that only through these plans is it possible for the lower income groups to take care of their catastrophic illnesses. With time and experience, these plans can be greatly improved. Meanwhile, they are protecting hospitals from losses and guaranteeing physicians at least a moderate fee from persons of small means.

In conclusion attention is directed to certain self-evident facts:

1. The problem of financing major illnesses among the lower income group *exists*.
2. This problem must be solved in the very near future either through voluntary insurance or —socialized medicine! Time is running short.
3. Existing Blue Cross and Blue Shield plans can be materially effective in solving this problem,

if they can gain sufficient enrollment.

4. This enrollment can be attained economically and efficiently by cooperative physicians.
5. All physicians must become participating physicians, help with enrollment, and help improve their plan. Remember it is the medical profession's own prescription.

WM. R. PRETLOW,
Chairman Board of Directors
Virginia Medical Service Association

Public Relations Committee Meeting Successful

A meeting of the Public Relations Committee was held at the Ruegers Hotel on December 14, 1949 for the purpose of discussing plans for the coming year.

Those in attendance were Dr. W. C. Caudill, President of the Medical Society of Virginia, four members of the Council and members of the Reorganization Committee.

One of the topics of discussion was a list of Proposed Public Relations Activities for 1950 for local medical societies. These were endorsed and will be made available to the local medical societies in the near future.

The value of conferences for members of the District Council in their respective Congressional Districts was considered and the continuance of these was recommended.

Copies of Dr. Marjorie Shearon's reports (American Medicine and the Political Scene) were up for discussion and it was decided that these should be made available to the Council, members of the District Council, and generally for an official in each local medical society during the next six months.

Another item of literature "The Road Ahead" by John T. Flynn was enthusiastically endorsed. If any one doubts the importance of what Mr. Flynn has to say in his book they could refer to what at least one columnist has written on it.

Westbrook Pegler in an article concerning this book suggests that "The Road Ahead" is one of the foremost pieces of literature, politically, in our time. He indicates that the book made him conscious of the fact that Socialism is Communism and our "planners" are making preparations for Communism.

The Objectives for the Year of the President of the Medical Society of Virginia were presented and discussed with the view of implementation.

This conference was another indication of the serious work of the Public Relations Committee. All members were present and entered freely into the discussion.

The Die Is Cast

The second session of the 81st Congress has begun . . . and with it renewed effort to enact into law bills that would place American medicine under the thumb of Socialism.

President Truman in his State of the Union message reaffirmed his desire for a greatly enlarged social security service, increased coverage and benefits of the unemployment compensation law and the establishment of a system of "medical insurance" which would promise to afford medical care to everyone.

That in essence is the road that Mr. Truman would have the American people believe is best for them, but he fails to explain just what this would cost or how to meet this expense.

The implementation of Mr. Truman's program could get a quick start in the passing of Senate Bills 1679, 1453, 1411 and H.R. 6000.

Senate Bill 1679 would provide medical care to approximately 85 per cent of the population through National Compulsory Health Insurance. There would be an initial three per cent tax on wages up to $4,800 with additional needed funds made available from the Treasury.

Senate Bill 1453 proposes Federal funds to assist the States in providing general health, hospital, medical, and dental services for persons unable to pay the whole cost of the voluntary insurance plan.

Senate Bill 1411 presents the Administration's $35,000,000 program for aid to States in providing health examinations and treatment of such physical and mental defects and conditions for all school children (between ages five and seventeen) . . . regardless of economic status of parents.

H.R. 6000 is the Administration's version of liberalization and extension of the present Social Security Law. Eleven million people would be added to the rolls of Social Security and the maximum taxable portion of wages would be raised to $3,600. Also included in the bill is a provision for compulsory contributions for permanent and total disability insurance. The American Medical Association is opposed to the latter provision.

Opposition to these four bills has been registered

by the American Medical Association and it is suggested that active opposition be registered by organizations and individuals.

The die is cast . . . now is the time for action.

Virginia State Legislature Convenes

The 1950 session of the General Assembly of Virginia convenes Wednesday, January 11.

At this moment there is some uncertainty over the extent to which the Legislative Committee of the Medical Society is prepared to advise the membership on legislation of concern.

It seems certain, however, that matters will be brought up that will either call for the endorsement of, or opposition from the Society.

Perhaps, for the time being, it would be well for the membership to be legislative conscious and in readiness to be alerted by the committee when needed.

The Use of Libraries in Our Educational Campaign

During the past few weeks plans have been made to distribute educational materials to public school libraries throughout the State.

Key people in the Department of Education were contacted and their views solicited. Acting with their consent and advice a letter was sent to each Division Superintendent in the State telling of our desires and asking permission to distribute materials in his division. A kit of these materials was sent to each Superintendent along with a copy of the proposed letter to the librarians for approval.

This material is of course going out and it is believed that this will serve a purpose in educating the pupils and school personnel to the point of view of the medical profession.

Approximately eighty reply cards of consent were returned representing some three hundred and fifty schools.

Similar materials are being sent also to the public libraries and to the libraries of institutions of higher learning.

Perhaps it might be stimulating if those interested in our Educational Campaign might inquire of, or otherwise express some interest in, these materials at the libraries.

BOOK ANNOUNCEMENTS

Essentials of Obstetrical and Gynecological Pathology. By ROBERT L. FAULKNER, M.D., F.A.C.S., Assistant Professor of Gynecology, The Western Reserve Medical School; Associate Gynecologist, University Hospitals of Cleveland, Ohio. And MARION DOUGLASS, M.D., Formerly Assistant Professor of Gynecology, The Western Reserve Medical School. St. Louis, The C. V. Mosby Company. 1949. 357 pages, with 300 illustrations including 3 color plates. Cloth. Price $8.75.

Human Growth. The Story of How Life Begins and Goes On. Based on the Educational Film of the Same Title. By LESTER F. BECK, Ph.D., Associate Professor of Psychology, University of Oregon. With the Assistance of Margie Robinson, M.A. Harcourt, Brace and Company, New York, 1949. 124 pages. Cloth. Price $2.00.

From the Hills. An Autobiography of a Pediatrician. By JOHN ZAHORSKY, M.D. St. Louis, The C. V. Mosby Company. 1949. 388 pages. Cloth. Price $4.00.

For The New Mother. By MILDRED V. HARDCASTLE, R.N. Illustrations by Shirley Tattersfield. The John C. Winston Company, Philadelphia, 1948. Cloth. xii-163 pages. Price $2.00.

This publication is a thorough guide for the inexperienced mother. It first emphasizes the infant's care at the time the mother actually gains possession of the offspring, upon leaving the hospital. There are well-regulated schedules and diets to aid the mother through the first year. There is an excellent chapter, with simplified explanation, for the mother to cope with emergencies. An important feature of the book is the idea stressed by the author that the mother should maintain her individuality by developing hobbies and diversions that fit in with her new form of life.

The book is well bound with the printing in good type on a light, soft, non-glare paper. Reading the text should be recommended to the new, inexperienced mother.

JANE WEMPLE, R.N.

EDITORIAL

Ephraim McDowell

THE Cohees of Virginia were a remarkable people and played extremely important roles in the development of the Nation. In comparison with the Tuckahoes who lived east of the Blue Ridge they were racially, more homogeneous being for the most part Scotch-Irish with a big sprinkling of Palatine Germans and they possessed two characteristic qualities, a love of liberty, which had made them leave their homeland, and a thirst for learning which was second only to their religion. In fact it was a part of their religion. They were a hardy and efficient people; they had to be to survive the hard Virginia frontier. This small group furnished the nation not only with Ephraim McDowell and his heroic patient, Jane Todd Crawford, but Jesse Bennett, who performed the first Cesarean section in America, and his equally heroic patient, Mrs. Bennett, Alexander Humphreys who taught McDowell, Samuel Brown and eight other less well-known physicians, Cyrus McCormick, the inventor of the reaper, James A. E. Gibbs, the inventor of the chain stitch sewing machine, Archibald Alexander, the theologian, and John Letcher, the statesman, and the many-sided Sam Houston.

It is usually stated that Ephraim McDowell was born in Rockbridge County, Virginia, March 11, 1771, a few miles from where Jenny Todd, his famous patient, was born eight years earlier. As a matter of fact they were born in Augusta County, for at that time Rockbridge County, as well as the whole State of Kentucky, was a part of Augusta County, Virginia. Ephraim's parents, Samuel and Sarah McClung McDowell, were prominent people of Virginia. When Ephraim was twelve years old, they moved to what is now Danville, Kentucky, because Samuel McDowell had been appointed by the Legislature of Virginia, Land Commissioner. Jenny Todd moved to Green County upon her marriage to Thomas Crawford, January 9, 1794. The ceremony, by the way, was performed by the Rev. Samuel Houston in Lexington, Virginia.

When he was nineteen years of age, Ephraim came back to Virginia, for by that time Kentucky had become a separate State. He began the study of medicine under Alexander Humphreys and in 1793 he went to Edinburgh, where he studied at the University and privately under John Bell. Much has been said of Bell's influence on his pupil, especially Bell's conviction that a diseased ovary was a hopeless condition. Too little has been said about the medical influences on this side of the Atlantic. When McDowell returned from Edinburgh in 1795, he must have stopped by Staunton to visit his preceptor. It was directly on his route, and he probably spent at least one night with him. Hugh Trout suggests that they surely discussed the much talked of operation that Jesse Bennett had performed on his wife six months previously, thirty miles distant at Edom. Not only was it the first successful Cesarean section in this country, but it was the first time the ovaries had been removed. Dr. Humphreys knew all the details, for he had been the consultant in the case.

So much has been said about the primitive conditions and lack of surgical facilities on the frontier that one gets the impression that surgery there was both infrequent and inferior. It is true that laparotomies were not done, but that was true all over the world. In 1806 Dr. Walter Brashear of Bardstown performed the first successful hip joint amputation in the world. Dr. Benjamin W. Dudley of Lexington, Kentucky, another neighbor of McDowell's, is credited with having performed 225 lithotomies and also with ligating the subclavical artery for an aneurism in the axilla.

The first ovariotomy has been so frequently described that the story is a familiar one. In December 1809 Dr. Ephraim McDowell was called to see Mrs. Crawford who was thought to be pregnant. She had gone past her due date and was having pains but made no progress. Dr. McDowell examined her and found that she was not pregnant, but was suffering from an ovarian cyst. The outlook was hopeless unless the tumor were removed. He explained to Mrs. Crawford that such an operation had never been done but that he was willing to try the experiment, provided she would come to Danville. She consented at once and made the journey on horseback, a distance of 60 miles.

The operation was done in the doctor's house on Sunday morning, as was his custom, so as to get the benefit of the prayers in the churches. Dr. James McDowell, the doctor's nephew, began the incision and Dr. Ephraim McDowell completed it, taking about twenty-five minutes. He was unable to deliver the cyst until he evacuated fifteen pounds of dirty gelatinous material. At this point the intestines escaped and could not be replaced until after he had removed the sac, which weighed seven pounds. He already had put a stout ligature about the pedicle. The patient was now turned on her left side so as to allow the blood to escape and he closed the external opening with interrupted sutures and adhesive plaster, leaving out at the lower end of the incision the ligature which surrounded the Fallopian tube. The patient bravely repeated Psalms all during the operation. On the fifth day she was up making her bed and in 25 days she went home, completely cured.

With the years the story has been greatly embellished. One embellishment is that a local preacher, while the operation was going on, told his congregation that such an operation was unheard of and was nothing short of murder. Another tale is that an armed and angry mob collected and was dispersed by the sheriff. James Thomas Flexner in his "Doctors on Horseback" makes it more dramatic by saying that the mob awaited with a rope thrown over a limb so as not to lose any time in stringing up the doctor in case he failed. Flexner fixes the date of the operation as December 25th. The mob story is probably pure myth. Samuel W. Gross, one of the first to describe the operation and who knew the people and the place well, makes no mention of it, although he spared no effort to gather all the details. The best answer to the mob story was given in 1912 by Col. Nick McDowell. He asked, considering the Doctor's character and standing in the community, what would have happened to the mob? As to the date, Christmas day in 1809 fell on a Monday.

In 1813 Dr. McDowell operated on a negro woman and in 1816 upon another one. He reported these three cases in 1816. Two years later he reported two more cases. All patients recovered except the last one. He sent a copy of his first report to John Bell in Edinburgh, but in Bell's absence it fell into the hands of John Lizars who was filling Bell's place. In 1823 Lizars essayed an ovariotomy but instead of a tumor he found only a mass of fat. In 1825 he made three additional attempts. Of these, one patient recovered, one died, and in the third the operation was abandoned. In 1821 Nathan Smith at Dartmouth performed a successful operation without knowledge of McDowell's operations.

McDowell's reports met with adverse criticism and disbelief. This, along with Lizar's failures, delayed the adoption of McDowell's operation some thirty years, when the operation was revived by the Atlees, Peaslee and others in this country, and by Charles Clay of Manchester, England. McDowell continued to operate and did altogether thirteen ovariotomies.

McDowell did not recognize the full implications of his operation, nor did anyone else, for that matter. That it opened up a new and important field of surgery was not dreamed of for some years. Much credit is due to S. W. Gross who put the operation in its proper prospective and in seeing that McDowell was accorded his proper credit.

Every one who has written on this subject has been full of praise of McDowell's private life and character. When he was 31 years old he married Sarah Hart, the daughter of the first Governor of Kentucky. They lived very happily together and she bore him six children. He died on June 20, 1830, after a brief illness, following the hearty eating of strawberries. Schachner thinks it may have been appendicitis. That the "Father of Ovariotomy and the Founder of Abdominal Surgery" should have died of such a disease would be the irony of fate.

This is the 9th of a series of "Doctors for whom the public should be thankful."

Manikin Obstetrics

WHEN Mme. DuCoudray, in the 18th Century, went about France with her machine teaching midwives, the manikin was a useful innovation in the teaching of obstetrics. At the recent clinical sessions of the American Medical Association, especially designed for general practitioners, the manikin occupied a prominent place on the program, in demonstrating breech extractions and forceps delivery. These courses were so popular that we were unable to get in the room, much less to find a seat. We do not know how the demonstrations were conducted so what we have to say on this subject has no reference to the Washington meeting.

We had thought that the manikin was not only an outmoded but a dangerous way of teaching obstetrics. There is nothing realistic about it, even when an embalmed fetus is used. The sutures and fontanelles do not give the same touch picture that a baby, which had undergone moulding and edema incident to labor, does. More important is the absence of anything that looks like or feels like a cervix. In breech deliveries, and forceps deliveries, it is more important to know "when" than "how". The manikin exercises emphasize the "how" and ignore entirely the "when". The result is that the medical schools have been sending out graduates who are keen to do forceps operations but who have no idea about what a cervix feels like. Every community has one or more doctors who never learn to tell when a cervix is dilated. They keep sending to the hospital cases of "failed forceps" in which the cervix is only two or three fingers dilated. Another type is the doctor who is more expert and who manages to deliver the baby, but the mother has severe loss of blood from cervical lacerations. These doctors become as well known to the hospitals as the kleptomaniac to the retail merchants, and they are as incurable. The trouble with such doctors is the way they were taught in the medical schools. The manikin should be relegated to the museum and obstetrics should be taught on the patient. If there be not enough clinical material, it would be better to use moving pictures where emphasis can be put on the condition of the cervix rather than on the technic of breech extraction or the application of the forceps. A well designed motion picture can show the presentation of the fetus and the relation of the cervix to the presenting part by diagrams, and, after full dilatation, the actual operation. In this way the importance of the cervix can be emphasized. Of course the student's sense of touch is not educated but at least he does not get a false touch picture.

Hugh Henry Trout, Sr.
(1878-1950)

ON Friday, January 13th, Dr. Hugh Trout, Sr., died of coronary thrombosis at his home in Roanoke. For many years, Dr. Trout has been prominent in the affairs of the Medical Society of Virginia, and was its president in 1940. He was born in Staunton, June 6, 1878, the son of Philip H. and Olivia (Benson) Trout. Upon graduating in medicine at the University of Virginia in 1902, he went to Baltimore for hospital training. He served as interne in the Johns Hopkins Hospital, 1902-4, under the late Hugh Young, as surgeon in St. Joseph's German Hospital, 904-5, and Union Protestant Infirmary, 1905-8. He studied abroad 1907-8.

In 1908, he built the Jefferson Hospital in Roanoke and has been its surgeon-in-chief since 1910, except for two years during the first World War when the hospital was closed, while Dr. Trout served as a Lieutenant-Colonel in the Army Medical Corps overseas. In the second World War, he was chairman of Procurement and Assignment Service for Physicians in Virginia. He was a Fellow of the American College of Surgeons and a member of the American Medical Association, the Southern Medical Association, the American Surgical Association, the Southern Surgical Association (president in 1931), and the International Surgical Association. He was a past president of the Roanoke Academy of Medicine. He was a contributor to many medical journals. He was also interested in the history of medicine and wrote an authoritative account of the *"Scotch-Irish" of the Valley of Virginia and Their Influence on Medical Progress in America,* for the *Annals of Medical History.*

Dr. Trout was a good surgeon and a good citizen. He was an honorary member of Alpha Omega Alpha, a Phi Kappa Psi, a Mason and a Rotarian. He was a good churchman and was a vestryman and senior warden of Christ Episcopal Church for many years. At the time of his death, he was a member of the board of visitors of the Virginia Episcopal Seminary in Alexandria and of the University of Virginia.

Dr. Trout was married twice. His first wife, Leonora Cocke, died in March 1924. In 1926 he married Alice Green, who survives him. He is also survived by three sons and two daughters, Mrs. Herman Holster, Dr. Hugh H. Trout, Jr., Dr. Philip Cocke Trout, Miss Alice Green Trout, and Albert Henry Trout.

In the death of Hugh Trout, the MONTHLY loses a good friend and a helpful critic.

SOCIETY PROCEEDINGS

Accomack County Medical Society.

Members of this Society were entertained at a buffet supper at the office of Dr. Henrik Shelley in Chincoteague on the evening of December the 8th. Dr. I. Rivers Hanson, obstetrician and gynecologist of Salisbury, Maryland, who had recently returned from several months in England, spoke on "Socialized Medicine in England" and of the way the medical profession feels in regard to it. Several visitors were present in addition to the members.

Officers elected at this meeting are: President, Dr. John W. Robertson, Onancock; vice-president and president-elect for 1951, Dr. Glenn Parks, Temperanceville; and secretary-treasurer, Dr. James C. Doughty (re-elected), Onancock.

Arlington County Medical Society.

At its regular monthly meeting on December 15th, the following officers were elected to serve for the calendar year 1950: President, Dr. Robert C. Hood; vice-president, Dr. John B. Leary; secretary, Dr. Harry C. Bates; treasurer, Dr. J. Raymond Hutchinson. All are of Arlington.

Joint Meeting.

The Arlington-Fairfax branch of the Association of American Physicians and Surgeons sponsored a

meeting on December 13. Physicians of surrounding Virginia counties were invited to hear a report on the British National Health Plan by Dr. Marjorie Shearon, who had recently returned from an inspection trip throughout England, and were also addressed on proposed medical and social legislation by Mr. Harry Northam, Executive Secretary of the Association of American Physicians and Surgeons.

Fredericksburg Medical Society.

At the annual meeting of this society on December 9, the following were elected as officers for the ensuing year: President, Dr. John L. Smoot, Fredericksburg; vice-president, Dr. W. H. Johnson, Spotsylvania; and secretary-treasurer, Dr. C. V. Cimmino, Fredericksburg.

The Fourth District Medical Society

Held its regular meeting on December 13, at Central State Hospital, Petersburg, under the presidency of Dr. J. A. B. Lowry of Crewe. A banquet was held at Hotel Petersburg in the evening. Officers elected for the ensuing year are: President, Dr. Fletcher J. Wright, Petersburg; vice-presidents, Drs. Meade S. Brent, Petersburg, and R. H. Manson, McKenney; secretary-treasurer, Dr. William S. Sloan (re-elected), Petersburg; and chairman of Steering Committee, Dr. Carney Pearce, also of Petersburg.

Northampton County Medical Society.

Dr. W. C. Henderson was elected president of this Society for 1950, Dr. J. E. Gladstone vice-president, and Dr. J. R. Mapp was re-elected secretary-treasurer. Dr. Charles Robertson was elected to the Board of Censors. The Society met January 12th at Eastville Inn.

Dr. W. J. Sturgis, Jr., gave an illustrated lecture on Obstructive Lesions of the Urinary Tract. Dr. J. R. Mapp demonstrated some such cases radiographically.

The forthcoming drives for funds for the new Nurses Training School and Home and for Poliomyelitis were discussed, and a new member was welcomed.

Dr. J. M. Lynch was the retiring presiding officer.

The Northern Virginia Medical Society

Met in Strasburg, December 13, with Dr. Harold Miller of Woodstock presiding. An interesting case report and a paper on fractures were presented by Dr. Elizabeth Sherman of Front Royal and by Dr. Bradford Bennett of Winchester. Dr. Edward Ray of the Medical College of Virginia, Richmond, the invited guest speaker, reported on two cases "Unresolved Pneumonia" and "Carcinoma of the Lung", using lantern slides during their presentation.

Officers elected to serve during 1950 are: President, Dr. James Miller, Winchester; vice-president, Dr. George Long, Luray; and secretary-treasurer, Dr. Frank Gearing, Jr., Woodstock. Two doctors were admitted to membership. It was decided to hold the next meeting in Winchester on April 11.

The Williamsburg-James City County Medical Society

Held its regular bi-monthly dinner meeting January 13, at the Williamsburg Lodge, following a social hour at the home of the vice-president, Dr. Eleanor Beamer Maxwell, who presided at the meeting.

A letter from Dr. Wyndham Blanton, Chairman of the Committee on Coroners of the Medical Society of Virginia, was read calling attention to the proposal to transfer the office of the Chief Medical Examiner to the Department of State Police. After a brief discussion, a motion was made by Dr. Stokes and was unanimously passed, instructing the Secretary to write letters to the Governor, the President of the Senate and the Speaker of the House of Delegates, voicing the opposition of the Society to this measure.

A letter from Dr. George F. Lull, Secretary of the American Medical Association, quoted some recent changes in the By-Laws of the American Medical Association, which have the effect of raising the dues $25.00 per year. No action was taken by the Society.

A letter from Dr. W. Roy Mason, Jr., of Charlottesville, announced the establishment of a memorial to Dr. Staige Davis Blackford and solicited contributions. This was approved but the matter of contributions was left to individual members.

Dr. Mason Romaine, of Petersburg, Chief of the Cancer Control Division of the Virginia Department of Health, made a talk in which he described the work of his organization and presented a motion picture, illustrating the value of early diagnosis and effective treatment in reducing the death rate of malignant disease.

GRANVILLE L. JONES
Secretary

Wise County Medical Society.

The regular meeting of this Society was held at the hotel in Norton, December 14, with an attendance of 30. After a good "Dutch treat" steak dinner, Dr. Mathew T. Moorehead of St. Marys Hospital, Norton, gave a lecture on some interesting surgical cases, which was illustrated with color slides. Dr. John D. Winebrenner, Area Medical Administrator for the United Mine Workers Welfare and Retirement Fund, spoke briefly. This was followed by an informal conference participated in by most of the members. Wyeth's new talkie color picture on "Allergy" followed. Several new members were elected.

Scott County Medical Society.

A meeting of the Scott County doctors was called early in December at which time the society was reactivated, and the following officers were elected: President, Dr. W. L. Griggs, Jr.; vice-president, Dr. Jack S. Shaver; secretary-treasurer, Dr. G. C. Honeycutt, Jr. All are of Gate City. At this meeting several new members were admitted.

Roanoke Academy of Medicine.

At the meeting of the Academy on January the 9th, the scientific program was given by Dr. Alexander McCausland on Observations on the Management of Asthma Associated with Sinus Disease, and Dr. E. J. Palmer, whose subject was Electroshock Therapy. Dr. Marcellus A. Johnson, Jr., is president of the Academy and Dr. Wm. H. Kaufman secretary-treasurer.

The South Piedmont Medical Society,

At a recent meeting, elected Dr. W. C. Brann of South Boston as president, and Dr. T. J. Moran of Danville as secretary.

Shenandoah County Memorial Hospital.

The Medical Staff has been named for this new hospital now under construction just south of Woodstock. Dr. Harold W. Miller of Woodstock has been named as chief of the medical staff, with Dr. J. M. Winkfield of Strasburg as assistant chief. Dr. Frank W. Gearing, Jr., of Woodstock is named as secretary with Dr. R. W. Stoneburner of Edinburg and Dr. Edward Hopewell of Strasburg as members of the executive committee. Dr. R. C. Fravel of Woodstock was appointed chairman of the medical advisory committee of the board, with Drs. G. R. Waterman and F. W. Gearing, Sr., other members of the committee.

The Smyth County Medical Society

Held its December 15 meeting as dinner guests of the Kiwanis Club of Saltville. Dr. D. C. Boatwright, retiring president, reported on the accomplishments of the Society during the year. Following this, Dr. R. C. Potter read some letters in response to a summary concerning the Smyth County Plan for the care of Smyth County indigents which had been sent to various Congressmen and medical societies.

Mr. Frank Galligher, general field representative of the American Red Cross, spoke on the establishment of the regional blood center in Roanoke and how this service was to be organized in that county. The Society voted unanimously to approve the new Red Cross program and the following were appointed as members of a committee for this purpose: Drs. Walter Schiff, D. C. Boatwright, Wm. N. Greever, C. C. Hatfield, L. E. Jarrett, T. K. McKee, A. D. Hutton and J. R. Blalock, with authority to appoint their own chairman.

The following officers were elected for the ensuing year: President, Dr. C. C. Hatfield, North Holston; vice-president, Dr. R. H. Harrington, Marion; secretary-treasurer, Dr. R. C. Potter (reelected), Marion. Delegate and alternate were named to represent the county in the House of Delegates at the State Society.

Dr. R. H. Harrington was named to serve on the board of censors for three years, and members were appointed on the following committees: *Program and Scientific,* Drs. R. C. Potter, Don Greever and J. A. Soyars; *Public Health and Legislation,* Drs. James Suter, L. E. Jarrett and Walter Schiff.

RICHARD C. POTTER,
Secretary-Treasurer

The Virginia Peninsula Academy of Medicine

Held its January 16 meeting at the Coca Cola Building in Newport News, under the presidency of Dr. Russell Buxton of that city. The guest speaker was Dr. Mims Gage of New Orleans, the recognized world authority on the subject which he presented—"The Management of Acute Pancreatitis". A cocktail hour and dinner preceded the meeting. Dr. Benjamin Miller of Kecoughtan is vice-president, and Dr. William A. Read of Newport News, secretary-treasurer.

NEWS

The Tri-State Medical Association of Virginia and the Carolinas

Is to hold its annual meeting in Fayetteville, North Carolina, February 20 and 21, under the presidency of Dr. Russell Buxton of Newport News. Headquarters will be at the Prince Charles Hotel. Other Virginia doctors among the officers are Dr. Jos. E. Barrett, Richmond, vice-president, and Drs. Rex Blankinship, Richmond, J. W. Devine, Jr., Lynchburg, and Dr. William A. Johns, Richmond, councilors.

Information about the meeting may be obtained from the secretary, Dr. J. M. Northington, Charlotte, North Carolina.

Health Department News.

South Norfolk has been joined with Norfolk and Princess Anne Counties to form the Norfolk-Princess Anne-South Norfolk Health District and Dr. William Y. Garrett has been placed in charge of the combined district. He will continue to have his offices in Portsmouth.

Dr. Richard B. Wissinger has been named as health officer of the Alleghany-Botetourt Health District.

Dr. E. D. Hardin, who has been in charge of the Shenandoah-Warren Health District, has announced his resignation to accept a position with the State Board of Health of North Carolina.

Spring Congress.

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, announces its twenty-third annual spring Congress in ophthalmology and otolaryngology to be held in that city, April 3-8, at the Hotel Patrick Henry. Guests of honor include Sir Alexander Fleming of London, England, Dr. C. W. Mayo of Rochester, Minn., Drs. Conrad Berens and Arthur J. Bedell of New York, and Drs. Edmund Spaeth and Gabriel Tucker of Pennsylvania, as members of the faculty. Information in regard to the Congress may be obtained upon inquiry sent Dr. E. G. Gill, Box 2467, Roanoke.

Dr. A. J. Crutchfield,

Recently assistant professor of internal medicine at the University of Virginia Medical School, has offered his resignation to become effective January 1. He will be located in Winston-Salem, N. C., where he will specialize in internal medicine.

Dr. Augustine W. Tucker,

Until recently director of St. Luke's Hospital in Shanghai, China, has been named resident physician at Woodberry Forest School and will enter upon his duties there early in the year.

The Southeastern Surgical Congress

Will hold its Postgraduate Assembly at the Shoreham Hotel in Washington, D.C., March 6, 7, 8, and 9. Information in regard to this may be obtained from the secretary, Dr. B. T. Beasley, 701 Hurt Building, Atlanta 3, Georgia. The speakers will include: Drs. Otto C. Brantigan, Albert E. Goldstein, William F. Rienhoff, Jr., and George H. Yeager of Baltimore; Dr. Richard Cattell of Boston; Drs. Harry Lee Claud, Edgar W. Davis, Harry H. Kerr and Charles Stanley White, Washington, D. C.; Drs. Conrad G. Collins, Lucien A. LeDoux, Howard Mahorner and Neal Owens of New Orleans; Dr. Enoch Callaway, LaGrange, Ga.; Dr. J. D. Martin, Jr., Atlanta; Dr. J. C. Patterson, Cuthbert, Ga.; Dr. Williams C. Cantey, Columbia, S. C.; Dr. Henry W. Mayo, Jr., Charleston, S. C.; Dr. Bayard Carter, Durham, N. C.; Dr. A. T. Miller, Jr., Chapel Hill, N. C.; Drs. Donald S. Daniel and H. H. Ware, Jr., Richmond; Dr. Gilbert F. Douglas, Birmingham; Dr. William F. Harper, Selma, Ala.; Drs. Frederick H. Falls and Raymond W. McNealy, Chicago; Dr. D. P. Hall, Louisville; Dr. Hal E. Houston, Murray, Ky.; Dr. Archibald C. Hewes, Gulfport, Miss.; Dr. Willard H. Parsons, Vicksburg; Dr. William F. Meacham, Nashville, Tenn.; Dr. Charles B. Olim, Memphis; Dr. Louis M. Orr, Orlando, Fla.; Dr. Joseph S. Stewart, Miami; Drs. George T. Pack and William Crawford White, New York; Dr. Charles Rountree, Oklahoma City; Dr. Hays R. Yandell, Tulsa; Dr. Gabriel Tucker, Philadelphia; Dr. William L. Valk, Kansas City, Kan.; and Dr. Robert J. Wilkinson, Huntington, W. Va.

Dr. Waverly R. Payne, Newport News, is the councilor for the State of Virginia.

Dr. Julian Q. Early,

Of the University of Virginia, class of '43, has located in Bristol, Va., for the practice of medicine.

Dr. Jefferson D. Kernodle

Has been appointed Instructor in Pathology, Tufts Medical School, Boston. He is also Chief of Laboratory Service at the U. S. Marine Hospital, Brighton, Boston, Massachusetts. He was formerly Pathologist and Director of the Clinical Laboratory at the Alexandria Hospital, Alexandria. Dr. Kernodle was at one time connected with the Medical College of Virginia.

Petersburg Hospital Faculty.

Dr. Edith Miller has been elected president of the Petersburg Hospital Faculty, succeeding Dr. Francis N. Taylor who has served in this position since 1946. Other officers elected at this time are Dr. William Grossmann vice-president; Dr. Julius Hopkins secretary; and Dr. K. J. Moore assistant secretary.

Convalescent Hospital for Crippled Children.

Dr. Charles J. Frankel, associate professor of orthopedic surgery at the University of Virginia, recently spoke of plans for a new convalescent hospital for crippled children to replace the old one which has been used. The new hospital will be erected on a 14-acre plot located south of Scott stadium, and it is being planned to house between 40 and 50 beds for both white and colored children.

Communicable Disease Center.

Seventeen states in which epidemics or disasters occurred during 1949 received emergency aid from the Communicable Disease Center, Public Health Service. In those states the Center assisted the state health departments in controlling the spread of disease during 21 separate epidemics and disasters. Floods predominated.

The Communicable Disease Center provided consultation service to a number of other states on routine problems other than epidemics or disasters.

The American Society for the Study of Sterility

Will hold its annual meeting June 24 and 25 at the Sir Francis Drake Hotel, San Francisco. The Society is composed of doctors engaged in the various branches of medicine, both clinical and basic sciences, who are in one manner or another interested in the general over-all problem of reproduction.

Further information in regard to this meeting may be obtained from the secretary-treasurer, Dr. Walter W. Williams, 20 Magnolia Terrace, Springfield 8, Massachusetts.

The American Academy of General Practice

Is holding its 1950 scientific assembly at the Kiel Auditorium, St. Louis, February 20-23. At this time, twenty-two of the country's leading clinicians will deliver papers. Members are urged to attend and bring a doctor friend with them.

Today's Health

Is to be the new name for *"Hygeia"*, the A.M.A. health magazine, beginning with the March 1950 issue. *Hygeia* was established in 1923, primarily for the layman, with Dr. Morris Fishbein as editor. Effective with the January issue, Dr. W. W. Bauer succeeded Dr. Fishbein, retired, with Dr. William Bolton as associate editor.

Drs. Dalton, Deyerle and May.

Dr. J. B. Dalton and Dr. Wm. Minor Deyerle announce the association of Dr. Virgil R. May, Jr., in the practice of orthopedic surgery at 1100 West Franklin Street, Richmond.

Dr. Guy R. Fisher,

Staunton, has been appointed as campaign chairman of the 1950 Cancer Crusade of the American Cancer Society in Virginia.

Waynesboro Community Hospital.

Dr. C. C. Freed has been elected president of the staff of the Waynesboro Community Hospital, with Dr. Paul A. Woods as vice-president, Dr. T. L. Hoyt secretary, and Dr. A. M. McLaughlin treasurer.

The International and Fourth American Congress on Obstetrics and Gynecology

Will hold its meeting at the Hotel Statler, New York City, on May 14-19. The chairman of the general program committee is Dr. Howard C. Taylor, Jr. A partial list of the speakers is as follows: Professor Heinrich Martius of the Department of Obstetrics and Gynecology of the University of Goettingen in Germany; Dr. Leon Gerin-Lajoie of the University of Montreal; Dr. Carlos D. Guerrero of Mexico City; Dr. Arthur T. Hertig of Harvard Medical College; Dr. Carl Kaufmann, Professor of Obstetrics and Gynecology of the Faculty of Medicine at Phillip University at Marburg in Germany; Dr. Hans Ludvig Kottmeier of the Gyncological De-

partment of the Radio-pathology Institute in Stockholm, Sweden; Dr. Laksmanaswami Mudalier of Madras University, Madras, India; Dr. Manuel Luis Perez of Buenos Aires; Dr. S. R. M. Reynolds of the Department of Embryology at the Carnegie Institute in Washington; Dr. Walter Seegers of the Department of Wayne University College of Medicine in Detroit; Dr. Harold H. Sheehan, Professor of Pathology at the School of Medicine of the University of Liverpool in England, Dr. Jean Snoek of the Hospital St. Pierre at the University of Brussels; and Dr. Herbert F. Traut of the University of California Medical School. The above speakers are to appear during the five morning general sessions and other noted men will take part in the afternoon programs.

For registration details, housing data and other aspects of the Congress, address inquiries to Dr. Fred L. Adair, 161 East Erie Street, Chicago 11, Illinois.

Medical College of Virginia News.

The following are among the promotions approved by the Board of Visitors of the College for the biennium, July 1, 1950—June 30, 1952: Dr. Samuel A. Anderson, Jr., who was promoted from assistant professor to associate professor of pediatrics; Dr. Emily Gardner from associate in the Department of Pediatrics to assistant professor in the department; Dr. Herbert C. Lee from assistant professor of surgery to associate professor of clinical surgery; Dr. Geoffrey T. Mann from assistant professor and acting head of the Department of Legal Medicine to associate professor and head of the department; Dr. Williams E. Pembleton from associate professor and acting head of the Department of Anesthesiology to professor and head of the department; Dr. Allen Pepple from assistant professor to associate professor of clinical dermatology and syphilology; Dr. Eric C. Schelin from associate in obstetrics to assistant professor of obstetrics; Dr. Henry C. Spalding from assistant professor to associate professor of obstetrics; Dr. Elam C. Toone, Jr., from assistant professor to associate professor of medicine; Dr. Edwin D. Vaughan from instructor to assistant professor of otology, rhinology and laryngology; Dr. Lawther J. Whitehead from associate professor of radiology to professor of clinical radiology; Dr. W. C. Winn from associate professor of obstetrics to professor of clinical obstetrics.

Dr. Joseph R. Kriz was made associate professor of pathology in addition to being assistant professor of clinical pathology. Dr. Simon Russi was made assistant professor of pathology as well as clinical pathology. Dr. Thomas W. Murrell, Jr., was changed from assistant professor of dermatology and syphilology to assistant professor of clinical dermatology and syphilology.

The Medical College of Virginia has instituted the system of awarding pins and buttons to its employees in recognition of ten or more years of service to the institution. Thirty-two men were awarded buttons and 57 women were given pins at Christmas parties of the institution this year. The emblem is a green cross with a gold edge, and bears the number of years of service and a distinctive stone. The total years of service represented by the awards is 1511—sixty employees of the hospital division receiving awards and 29 in the college division. Two received buttons with diamond stones, one for 40 years of service and the other 45.

Dr. John Louis Parks, professor of obstetrics and gynecology, George Washington University, School of Medicine, Washington, D. C., delivered the ninth annual Phi Beta Pi lectureship at the College on January 6th. Dr. Parks discussed "Diagnosis and Treatment of Placenta Praevia".

Phi Beta Pi which sponsored the lectureship is one of the medical fraternities at the college.

News from University of Virginia, Department of Medicine.

Under the auspices of the Postgraduate Program for House Officers, the following guest speakers have presented lectures to the faculty and student body:

Dr. W. L. Pressly of Due West, S. C., recipient of the A.M.A. General Practitioner's Award, discussed "General Practice as a Medical Specialty."

Dr. Louis K. Diamond, Harvard Medical School, spoke on the subject, "Present and Future Uses of Blood and Blood Derivatives in Modern Therapeutics".

Dr. C. N. H. Long, Dean of Medicine, Yale University, gave a lecture entitled "Recent Advances in Physiology and Biochemistry Which Bear Upon the Problem of Clinical Diabetes Mellitus".

Dr. Reginald Fitz, Assistant Dean of Medicine, Harvard Medical School, spoke on the subject, "Birdseye View of Medical Education".

Dr. F. C. Robbins, Children's Medical Center, Harvard University, gave a lecture entitled "In Vitro Cultivation of Poliomyelitis Viruses".

Dr. Daniel Blain of Washington, D. C. spoke on the subject, "What is Psychosomatic Medicine?"

Dr. Richard W. TeLinde, of the Johns Hopkins Hospital, discussed "Present Day Status of Early Diagnosis and Treatment of Cancer of the Cervix".

Dr. George T. Pack, New York, spoke on the subject: "Tumors of the Soft Somatic Tissues".

On December 5th, Alpha Omega Alpha, National Honorary Medical Fraternity, presented as guest speaker, Dr. James Barrett Brown of St. Louis, Missouri, who spoke on the "Possibilities and Limitations in Plastic Surgery."

Dr. Philip Hench, Professor of Medicine, Mayo Foundation, spoke to the faculty and student body on the subject, "Compound E", on November 2.

At the recent meeting of the Southern Surgical Association, Dr. W. Gayle Crutchfield, Professor of Neuro-Surgery, was elected first Vice-President.

Raiford Memorial Hospital.

Dr. Emmett F. Reese, Jr., of Courtland has been named the new chief of staff of the Raiford Memorial Hospital at Franklin. Dr. Reese recently celebrated his fiftieth year of medical practice in the county. At the same time, Dr. Kurt Hirsch of Franklin was elected as assistant chief of staff and Dr. W. D. Varner, also of Franklin, was elected secretary.

Dr. G. A. Shawkey,

Gate City, left the latter part of December for Philadelphia, where he is taking a residency in pediatrics at the Philadelphia General Hospital.

Dr. Paul W. Bowden

Has been appointed as assistant director of the Richmond City Health Department, according to announcement of Dr. E. M. Holmes, Jr., director. Dr. Bowden assumed office January 1. He has been connected with health work in the city and State at various times.

Dr. Cecil Joins McGuire Hospital.

Dr. Richard C. Cecil, associate professor in medicine at the Medical College of Virginia since 1944, has joined the staff of McGuire Veterans Hospital, Richmond, where he will be with the paraplegic service. He is a member of the class of '32, Medical College of Virginia.

Head Hospital Staff.

Dr. James G. Willis has been elected president of the Mary Washington Hospital in Fredericksburg, and Dr. Lloyd F. Moss has been named secretary-treasurer. They took office at the January meeting.

American Board of Ophthalmology.

Candidates for the certificate of the American Board of Ophthalmology are accepted for examination on the evidence of a Written Qualifying Test. These Tests are held annually in various parts of the United States, and applications are now being accepted for the 1951 Written Test. They will be considered in order of receipt until the quota is filled.

Practical examinations for acceptable candidates 1950 will be in Boston, May 22-26; Chicago, Oct. 2-6; West Coast, January, 1951.

The Southeastern Allergy Association

Is to hold its fifth annual meeting at the Columbia Hotel, Columbia, South Carolina, February 11 and 12, under the presidency of Dr. Oscar Swineford, Jr. of the University of Virginia, Charlottesville. The program includes two panel discussions—Pediatric Allergy and Office Procedure.

Dr. Harry Rogers of Philadelphia is to be the guest speaker at the meeting of the Columbia Medical Society on Monday, the 13th, and doctors attending the Association meeting are cordially invited to remain and hear Dr. Rogers.

A Seminar in Otolaryngology and Ophthalmology,

Is to be held April 17-21 by the New York Polyclinic Medical School and Hospital in New York. This will give a review of recent advances in the diagnosis and treatment of the more common disorders in the fields of the above named specialities, comprising lectures, motion pictures and demonstrations in the clinics, operating rooms and dissecting room. There will be a number of guest speakers in addition to members of the staff.

More detailed information may be secured from Dr. David N. Barrows, Medical Executive Officer, New York Polyclinic Medical School and Hospital, 345 West 50th Street, New York 19, N. Y.

Dr. E. M. Henderson

Is opening his office at Machipongo where he plans to engage in general practice with a sub-specialty of

pediatrics. Dr. Henderson was a graduate of the University of Virginia Department of Medicine in 1942 and served with the Navy until recently discharged.

Dr. E. F. Reese, III,

Has moved his office from Franklin to Courtland, where he is engaged in general practice with his father, Dr. E. F. Reese, Jr.

The Gill Memorial Eye, Ear and Throat Hospital

Announces the association of Dr. Frederick D. White and Dr. Houston L. Bell in the department of ophthalmology and oto-laryngology.

Diplomates in Proctology.

Dr. C. C. Chewning and Dr. Robert V. Terrell, both of Richmond, have successfully passed the examinations and have been certified as diplomates in proctology.

The National Gastroenterological Association

Announces its Annual Cash Prize Award Contest for 1950. One hundred dollars and a Certificate of Merit will be given for the best unpublished contribution on Gastroenterology or allied subjects. Certificates will also be awarded those physicians whose contributions are deemed worthy.

Contestants residing in the United States must be members of the American Medical Association. The winning contribution will be selected by a board of impartial judges and the award is to be made at the Annual Convention Banquet of the National Gastroenterological Association in October of 1950. The Association reserves the exclusive right of publishing the winning contribution, and those receiving Certificates of Merit, in its official publication, *The Review of Gastroenterology.*

All entries for the 1950 prize should be limited to 5,000 words, be typewritten in English, prepared in manuscript form, submitted in five copies accompanied by an entry letter, and must be received not later than 1 June 1950. Entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23, N. Y.

National Society for Crippled Children and Adults.

A survey among physically handicapped adults who are in need of specially designed homes that will help to restore them to useful activities is being conducted by this Society. They state there are approximately five million handicapped homemakers in the U. S. today, many of whom could be restored to normal, useful lives if they lived in properly designed homes that would include such functional units as ramps instead of steps, wide passages for wheel chairs, color schemes for ease in cleaning, facilities built for chair height, safety features, etc.

The National Society, the Easter Seal Agency, has embarked upon a program designed to find out what the housing needs are for handicapped homemakers. From this survey, the Society will prepare a digest of suggestions and ideas for designers, engineers, and architects who will work on this model home project. Handicapped adults, both men and women, who are interested in participating in this mail survey will receive a questionnaire on request from the National Society for Crippled Children and Adults, 11 South La Salle Street, Chicago 3, Illinois. They are also interested in receiving the names and addresses of handicapped adults who will be asked to take part in this survey.

Wanted—

Technician, registered or eligible for registry for clinical laboratory in 150-bed hospital in Virginia. Full time pathologist, five technicians. Salary, $185.00 with meals and laundry. Apply C.O., care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

Office Space Available.

Office space is available for two doctors in the corner building at 932 West Franklin Street, Richmond. Call 4-3380. (*Adv.*)

OBITUARIES

Dr. Hugh Henry Trout,

Roanoke, recognized as one of the medical leaders in Virginia, and a former president of the Medical Society of Virginia, died January 13th of coronary thrombosis. A full notice on Dr. Trout appears in the editorial pages of this issue of the MONTHLY.

Dr. Benjamin Harris Tatum,

Clifton Forge, died at his home there on January the 7th, at the age of 79. He was a native of Franklin County, this State, and a graduate in medicine

from the University of Maryland, Baltimore, in 1891. He located in Clifton Forge in 1894 and continued practice there until a year ago. He was one of the original members of the "Fifty Year Club" of the Medical Society of Virginia in 1948. His daughter and a sister survive him.

Dr. Alvah Stone.

By the death of Dr. Alvah Stone on December 24, 1949, at the age of 80, the Roanoke Academy of Medicine lost one of its outstanding figures.

Dr. Stone graduated in medicine at the Louisville Medical College in 1891. In active practice for 60 years, he located first in Penhook, Franklin County, then in Worth, West Virginia. He came to Roanoke in 1907. Dr. Stone was for many years a member of the Medical Society of Virginia, and of the Roanoke Academy of Medicine, of which he was a past president. He became a member of the "Fifty Year Club" of the State Society at its 1948 meeting. He is survived by his wife, a son, and three daughters.

In a memorial ceremony at the regular meeting on January 9, the Roanoke Academy of Medicine expressed its sorrow and regret upon the loss of Dr. Stone.

Dr. Stone's long life full of action and achievement, devotion to duty to patients and friends, and years of influence in the Academy, was a constant inspiration to all of the members of the Academy and indeed to all who were privileged to know him. His kindliness toward the younger physicians will be especially remembered and appreciated. The Roanoke Academy of Medicine feels keenly the loss of this beloved physician.

WILLIAM H. KAUFMAN, M. D.
Secretary-Treasurer
Roanoke Academy of Medicine

Dr. Sidney M. Robinson,

Of Woodlawn, died in a Roanoke Hospital, December 22, at the age of 89. He graduated in medicine from the Medical College of Virginia in 1886 and joined the Medical Society of Virginia the same year. He was among those made members of the first "Fifty Year Club" of the Society in 1948. He was formerly a member of the House of Delegates of Virginia and had been active in civic affairs of his community. He practiced medicine in Carroll County for 60 years and was a member of the Carroll County Health Board for sometime. He is survived by his wife and two children.

An Appreciation of Dr. Yokeley.

Samuel Hill Yokeley, back two weeks from a Class reunion in Richmond, from which he rushed back after one day account of only other doctor in the village being ill, died in twenty-four hours from coronary occlusion, June 24, 1949. He was a graduate from Wake Forest, M.A., 1905, and the University College of Medicine, Richmond, as an M.D., 1909. Interned in West Virginia and then practiced at Buena Vista, until 1912, when he located at Meadow View, where he did a large rural practice. From the wide expanses of the rich hills and plateaus around, a big crowd came for his funeral, attesting devotion of the clientele which he served long and well as the best type of general practitioner.

Dr. Yokeley's friends were all those who knew him and the writer can think of no doctor who has served better for the forty years of his professional life.

T. J. TUDOR, M.D.

Dr. John David Miller.

We have just learned of the death of Dr. Miller of Bridgewater, which occurred September 19, as a result of hypertension and arteriosclerosis. He was seventy-nine years of age and graduated in medicine from the Medical College of Virginia in 1906. He had been a member of the Medical Society of Virginia for a number of years.

Dr. G. Blight Harrison.

The Northern Neck Medical Society, at a recent meeting, passed the following resolutions on the death on May 17, 1949, of Dr. Harrison, a former president:

BE IT RESOLVED that his untimely death has brought a feeling of genuine sorrow and great personal loss to the Northern Neck Medical Society and to his host of friends throughout the state. As a physician and soldier he was outstanding, his wit, humanity, kindness and personal magnetism endeared him to all and it can in truth be recorded of him that "None knew him but to love him, none named him but to praise", that his community has lost a valuable citizen and the medical profession a well beloved physician.

That the Northern Neck Medical Society wishes to express to the family of Dr. Harrison, their sincere sorrow in his sudden death.

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to his family, *The Fredericksburg Free Lance-Star,* recorded in the minutes of the Northern Neck Medical Society, and be sent to the VIRGINIA MEDICAL MONTHLY.

C. T. PEIRCE, *Chairman.*

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MANFRED CALL, III, M.D.
M. MORRIS PINCKNEY, M.D.
ALEXANDER G. BROWN, III, M.D.
JOHN D. CALL, M.D.

Obstetrics and Gynecology:
WM. DURWOOD SUGGS, M.D.
SPOTSWOOD ROBINS, M.D.

Orthopedics:
BEVERLEY B. CLARY, M.D.

Pediatrics:
CHARLES P. MANGUM, M.D.
ALGIE S. HURT, M.D.

Ophthalmology, Otolaryngology:
W. L. MASON, M.D.

Pathology:
REGENA BECK, M.D.

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IRMA LIVESAY

Bacteriology:
FORREST SPINDLE

Director:
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Even a flood...

failed to stop GE Service!

It was spring in Marietta and the Ohio River was on its seasonal rampage. In fact, its swollen waters were even licking at doorsteps in the busy downtown section — eagerly reaching higher and higher.

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GE Service went into immediate aciton. Checked State Highway Department — found roads to Marietta water-blocked. Then, chartered a plane which landed across the river from Marietta at Williamsburg, W. Va., about an hour later. After reaching downtown Marietta by flatboat and walking a few blocks, the GE serviceman arrived across the street from the doctor's office. However, flood waters blocked the way. This problem was neatly solved when a stalwart dentist friend happened along and volunteered to carry him and his equipment across the street piggy back.

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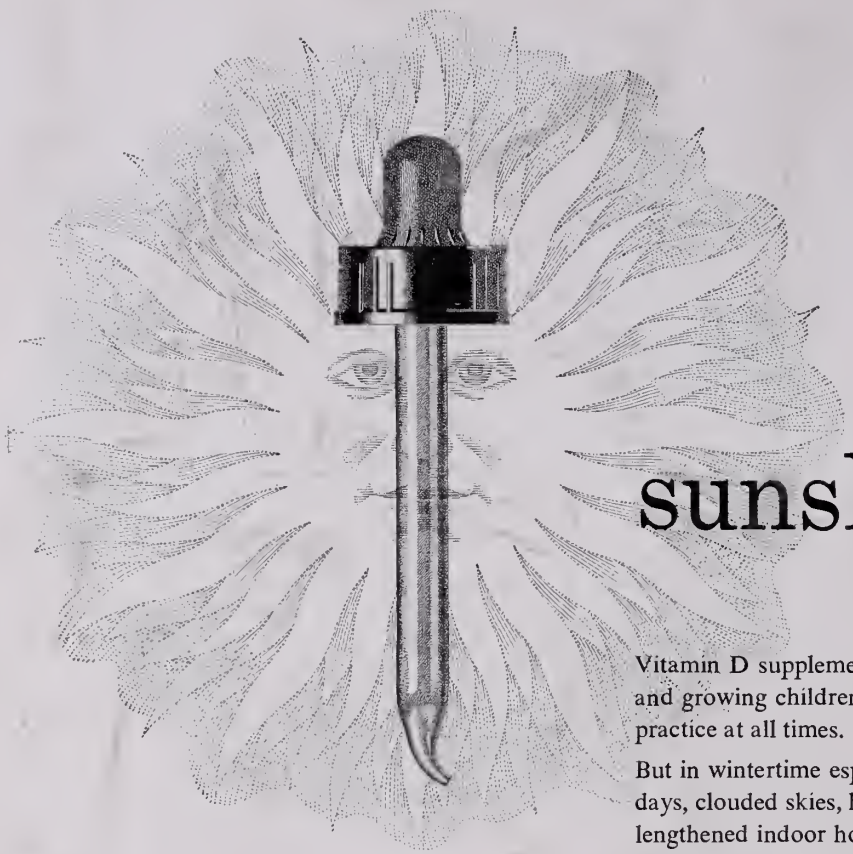

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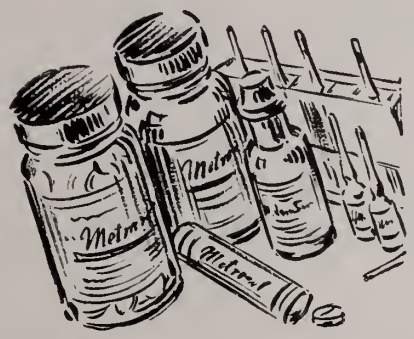

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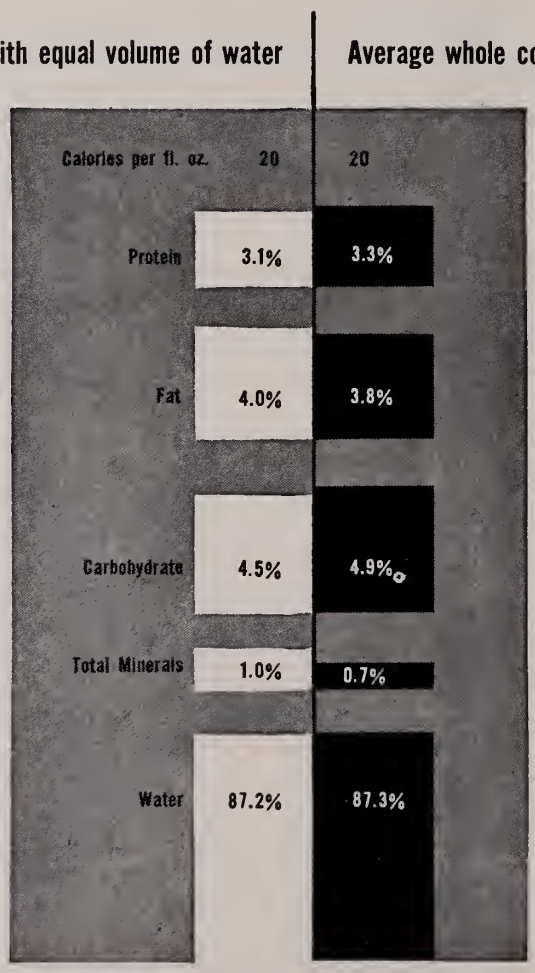

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GUEST EDITORIAL

Leukemia

LEUKEMIA remains one of the unsolved problems of hematology. The disease is characterized by unrestrained overgrowth of leucopoietic tissue and so belongs in the general group of malignancy. It seemingly arises from a generalized disturbance of leucocyte-forming organs rather than from a single cell characteristic of other malignancies such as carcinoma of the breast, stomach, uterus or prostate.

The incidence of leukemia is constantly upward. This is not due to greater diagnostic acumen in recognizing the disease but to an absolute increase in the number of cases. The death rate from leukemia tripled in the period 1920-1945[1]. The Metropolitan Life Insurance Company found a 50 per cent increase in mortality in the five-year period 1941-1945 with leukemia accounting for 3.8 per cent of deaths from all types of malignancy in 1941-1945[2]. Each year since 1940 more than 5,000 persons have died in the United States from leukemia.

There are many unexplained observations about leukemia. The disease is twice as frequent in males as in females; white persons are affected at a rate more than twice as great as non-whites; there is a definite geographic variation in incidence. A much higher death rate is observed on the Pacific coast than in the Southern states. This fact makes one think of varying exposure to some toxic agent such as exhaust gases from automobiles.

Leukemia is easily overlooked. It may mimic many other diseases. While leukocytosis is characteristic about one-third of any large group shows no increase in the number of leucocytes in the circulating blood. A large percentage of the acute cases have a leucopenia. Especially in unexplained anemia, abnormal bleeding or fever should the possibility of leukemia be considered. If the disease is thought of, a careful clinical study and examination of the blood and bone marrow should verify or exclude the diagnosis of leukemia.

Newer methods of treatment lend hope that leukemia in the future may not be uniformly fatal as in the past. In chronic leukemia irradiation has rightly been the treatment of choice. Even in the hands of competent radiologists the average duration of life in chronic leukemia has been lengthened only from 3 to 3½ years by X-ray treatment. Irradiation with radioactive isotopes, usually radioactive phosphorus P_{32}, has made little change in the outlook of the disease although some observers report less radiation sickness.

Recently new drug treatments have been utilized with encouraging results especially in acute leukemia. Most hematologists have considered irradiation contraindicated here and have utilized only palliative measures such as transfusion. Aminopterin, a glutamic acid compound closely related to folic acid, has now induced remission in a significant number of acute leukemias. No cures have been reported but it is most en-

couraging to find a therapeutic agent which actually may stay the course of acute leukemia. The results obtained with treatment seem to vary greatly in the hands of different clinicians but there is no doubt of the effectiveness of aminopterin and other folic acid antagonists in certain cases of acute leukemia. Further work may well yield much more active drugs.

Similarly, it has been found that an old and relatively simple drug, ethyl carbamate (urethane), may be very helpful, alone or with irradiation, in managing chronic myeloid leukemia. Nitrogen mustard may also be of value in selected cases. While none of these drugs are curative, the results are stimulating and emphasize the possibilities of newer approaches to treatment. The outlook for the leukemia patient, while still dark, is brighter than ever before.

RUSSELL L. HADEN, M.D.,
Crozet, Virginia

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EDITOR'S NOTE. Dr. Haden, a Virginian by birth, is the author of several books and was formerly professor of Experimental Medicine and head of the Department of Medicine of the Cleveland (Ohio) Clinic. He now resides at Brightberry Farm, Crozet, Virginia.

Floral Eponym

Dierevilla

DIÉREVILLA (FL. 1708)

SCARCELY anything is known about this man. The date of his birth, date of death, and given names are all unknown. Even his last name is spelled in various ways, Dierville, Di'reville and Diéreville. His occupation is given as surgeon, merchant or explorer. He is thought to have been born in Reux. It is a matter of record that he was nominated surgeon to l'Hospice de Pont, l'Eveque, Calvedos on December 21, 1701. He published several poems in *Le Mecure Galant.* His *Relation du Voyage de Port Royale de l'Acadie ou Nouvelle France,* Paris, 1708, is one of the classics of Colonial Canada. The original specimen of Diervillia that he took with him back to Paris is now in the Museum National d'Histoire Naturelle.

Diervilla is a small genus of low shrubs of the honeysuckle family. All are natives of North America, and go by the common name of bush honeysuckle. D. lonicera is called gravel weed.

PUNCH BIOPSY OF THE LIVER

C. M. CARAVATI, M.D.,
and
S. H. SANDIFER, M.D.,
Richmond, Virginia.

There are three practical methods of obtaining satisfactory sections of liver tissue for pathological study: (1) Surgical exploration. (2) Peritoneoscopy. (3) Needle biopsy. This presentation is concerned chiefly with the latter.

The first needle biopsy of the liver reported in the literature was performed by Lucatello[1] in 1895. He aspirated minute fragments of liver tissue and blood through a small caliber needle.

In 1941 Tripoli and Fader[2] reported the first series of cases, using the Silverman[3] needle and the anterior subcostal approach to the right of the rectus muscle. In 1945, Hoffbauer,[4] using the same technic, reported 65 biopsies with no serious complications. Terry[5] has recently reviewed the literature and has collected reports of 2,479 needle biopsies performed since 1939 with only 7 fatalities, a mortality rate of 0.28%. Further analysis indicated that in all 7 cases, there was a hopeless prognosis, or death could have been prevented by appropriate treatment. Schiff has more recently reported over 400 biopsies, using the trans-thoracic approach with no fatalities. It can be concluded, therefore, that the procedure is comparatively safe, if proper precautions are utilized.

This study is a report of 300 biopsies on 260 patients. Of this number, adequate tissue for accurate examination was obtained in about 70% of the cases. The more recent biopsies have yielded a higher percentage of satisfactory specimens.

Indications: (1) Diagnosis in cases of hepatomegaly. (2) Serial biopsies to follow progress, to evaluate therapy and to aid in prognosis. (3) For research purposes: (a) to correlate hepatic function tests and the histopathology of the liver and (b) to compare premortem specimens with postmortem sections, thereby eliminating the effect of post-agonal lysis on the hepatic cells.

Some Diagnoses Made from Needle Biopsy:

1. Hepatitis (a) acute, and (b) chronic.
2. Fatty metamorphosis.
3. Cirrhosis (a) portal (b) biliary (c) cardiac.
4. Amyloidosis (a) primary (b) secondary.
5. Gaucher's Disease.
6. Biliary Obstruction.
7. Cyst of the liver.
8. Lymphatic leukemia.
9. Hodgkin's disease.
10. Kala azar.
11. Hemachromatosis.
12. Von Gierke's Disease.
13. Sarcoidosis.
14. Diabetic liver (glycogen) ?
15. Miliary tuberculosis.
16. Malignant neoplasms.
    - (a) primary
        - (1) hepatoma
        - (2) cholangioma
    - (b) metastatic
        - (1) carcinoma
        - (2) lymphosarcoma

METHOD AND TECHNIC

In the early phases of this study the intercostal approach was utilized in several patients, but its hazards were soon recognized. Following the reports of Raby[6] and later of Toullec and Huard[7] emphasizing the danger of hemorrhage, the use of the trans-costal route was discontinued and we now employ this form of approach in only exceptional instances.

Only patients in whom the hepatic border is palpated at least two finger breadths below the costal margin are now biopsied.

At the bedside, under sterile precautions, procaine is injected into the abdominal wall and into the liver capsule. A small skin incision is then made and the Silverman needle is then inserted into the liver from 1 to 3 cm., with the point directed backward and upward. The split biopsy needle is then inserted full length into the trocar; with this held firmly *in situ*, the outer needle is advanced, complete rotation is accomplished and both needles simultaneously withdrawn. The core of tissues is immediately placed into 10% formalin solution.

The patient is asked to remain in the recumbent position for several hours and is observed closely for any evidence of hemorrhage.

Statistics on Series

About 300 patients were subjected to punch biopsy. Several of these were punctured two or more times. One patient was biopsied on five separate occasions.

The youngest patient was five years of age; the oldest was eighty-four years.

There were no fatalities and only one significant complication. This patient with Hodgkin's Disease apparently suffered a quite extensive intra-peritoneal hemorrhage and required several blood transfusions, but she recovered with no ill effects.

Several patients have experienced shoulder pain or moderately intense abdominal discomfort for some hours after puncture, necessitating the use of some opiate.

Many of our patients demonstrated prolonged prothrombin time at the time of biopsy; all were given vitamin K before the procedure and none bled significantly post-operatively. Therefore, we do not consider the finding of delayed prothrombin time a contraindication to needle biopsy, contrary to other workers. However, a prothrombin concentration of 25% or more is desirable.

Laparotomy was performed on several patients shortly after needle biopsy and inspection of the site of puncture revealed only a small visible defect on the surface of the liver with no evidence of recent bleeding.

Brief Resume of Several Cases

Case I—W. R., colored, male, age 62. Distinct, firm nodule in right lobe of liver, thought to be malignant. *Biopsy*: Peri-lobular cirrhosis in two sections, one from the nodule. Patient improved.

Case II—J. W., white, male, age 64. Large right upper quadrant mass. No other pertinent symptoms and signs except weight loss. *Biopsy*: Spindle cell sarcoma.

Case III—J. C., white, male, age 33. Recurring obstructive jaundice without pain. Hepatomegaly. *Biopsy*: Clear translucent fluid through needle suggested hepatic cyst. Confirmed and cured by surgery.

Case IV—V. T., white, female, age 34. Known hepatomegaly since age of 3. *Biopsy*: Von Gierke's disease.

Case V—H. T., white, male, age 45. Abdominal pain, enlarged liver and weight loss. *Biopsy*: Metastatic carcinoma.

Case VI—V. R., white, female, age 23. Mass in breast and large nodular liver, which on punch biopsy showed metastic carcinoma from breast, thereby altering plan of treatment.

Comment

1. Punch biopsy of the liver is a useful diagnostic procedure in the study of hepatic disorders, and of great assistance in selected cases.
2. It is comparatively safe, when properly performed and known precautions taken.
3. A partial list of pathologic diagnoses made from tissue obtained with the Vim Silverman needle is presented.
4. 300 needle biopsies are reported with no fatalities, and representative case reports are recorded.

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SEGMENTAL HYDRO-URETER—
Report of a Case*

CHARLES P. HOWZE, M.D.,
Washington, D. C.,
and
JOHN H. HILL, M.D.,
Norfolk, Virginia.

The finding of dilated ureters is not uncommon, but the very large hydro-ureter as observed in this case makes it opportune for recording and the sectional dilatation in the lower portion is a complement to its interest.

CASE REPORT

E. B., (No. 208684, Garfield Hospital), a 21 year old white male was admitted May 3rd, 1946, with a history of sharp and continuous left flank pain, which radiated down the left loin into the groin and then to the base of the penis, simulating a ureteral colic. Nausea had accompanied his illness, but there was no vomiting. The only urinary symptoms were burning on urination with slight urgency and frequency. There were no chills or fever experienced and his weight remained unchanged. The past history disclosed a similar attack five months previously, which subsided spontaneously after 3 days. The family history was reported negative and, outside of genito-urinary complaints, the systems review elicited nothing abnormal.

The physical examination found a well developed and well nourished young male experiencing considerable pain in his left flank. His temperature, pulse and respiration were within normal limits. The head and neck presented no abnormalities. The breath sounds were normal and the excursion of the chest wall was good. The heart was not enlarged to percussion and no murmurs were detected; the blood pressure was 134 mm. Hg. systolic and 80 mm. Hg. diastolic. There was tenderness on deep palpation in the left costovertebral angle and to a lesser degree in the left lower abdominal quadrant. The liver, spleen and kidneys could not be felt and there was no muscle splinting noted. The lymph glands, extremities, skin, external genitalia and reflexes were normal.

The laboratory studies were reported as follows: The urine was clear, amber; acid in reaction; specific gravity 1.012; albumin negative; sugar negative; acetone negative, and microscopically there were 4-6 W.B.C. and 3-5 R.B.C. per H.P.F. The hemoglobin was 80 per cent; the red blood count was 4,990,000; the white blood count was 13,700, segmented forms 68 per cent, and lymphocytes 32 per cent. The Kahn reaction was reported as negative. The blood sugar was 154 mgm. per cent and the non-protein nitrogen was 30.3 mgm. per cent.

Fig. 1 A. Intravenous pyelogram showing no dye excreted from left kidney and a normal right kidney. Note large left kidney shadow.

The excretory urogram demonstrated a normal right kidney and ureter. The left kidney shadow was enlarged and did not excrete the dye (Fig. 1A). The scout film showed no opaque shadows suggest-

*Read at the Annual Spring Clinic of the Norfolk County Medical Society, April 6, 1949.

ing stones. The cystoscopic examination of the bladder found no abnormalities. The left ureter could not be catheterized, due to an obstruction of the ureteral catheter at the 1 cm. marking. Ten cc. of 40 per cent skiodan was injected for a uretero-pyelogram without causing pain. Examination of the x-ray film with cystoscope and ureteral catheter *in situ* revealed a large collection of dye in a mass located to the left and superior to the bladder (Fig. 1B). The extra-vesical mass effected a pressure defect in the dome of the bladder. The contour of the mass outlined by dye and the failure to visualize the whole ureter and kidney pelvis caused some conjecture as to its true identity. An air cystogram after 24 hours showed retention of the dye and no evidence of air entering the mass (Fig. 2A). These findings suggested a uretero-vesical block with a large infected hydro-ureter or possibly a diverticulum of the ureter. Following the diagnostic procedures, the temperature became elevated to 104° F. The urine remained clear, the chest x-ray and blood culture were negative. Penicillin 30,000 units was administered intramuscularly every three hours in addition to sulfadiazine gram. 1 t.i.d. with soda; however, the septic course did not change and the patient's condition warranted more radical measures. Under ether anesthesia the left kidney was explored by the lumbar route. The kidney was mobilized and found to be dilated with a thinned out parenchyma. The ureter just below the uretero-pelvic junction measured 2 cms. in diameter and its wall was markedly thickened by inflammatory reaction. There were no obstructing bands noted. The ureter became extremely large in its lower portion, especially where it crossed the brim of the bony pelvis. It was freed as far down as the fingers could reach and the kidney along with the upper 2/3 of the ureter were removed. The critical condition of the patient and the size and the intense inflammatory reaction of the ureteral wall made its total removal injudicious. A number 28 F. angled rubber tube was inserted in the lower and remaining portion of the ureter. The tube was secured by a purse-string suture in the open end of the ureter. The temperature subsided after three days and a smooth convalescence ensued. Fourteen days after operation, dye was injected into the lower end of the ureter through the angled drain-tube and an occlusion of the ureter was evi-

Fig. 1 B. Large dilated lower 1/3 of left ureter, showing ureteral catheter obstructed at uretero-vesical junction. Note extravesical pressure defect in superior aspect of bladder.

Fig. 2 A. Air-cystogram showing retention of dye in ureter. There is no evidence of air entering the ureter.

dent at the uretero-vesical junction (Fig. 2B). The tube was removed on the 16th post-operative day. The patient was examined on December 10th, 1947, and found to be in good condition. The urine was clear; the lumbar scar was firm and he was free of pain.

Fig. 2 B. Dye introduced into lower ureteral segment through drainage tube. The ureter is obstructed at uretero-vesical junction.

The pathological specimen consisted of a large kidney of flabby consistency which measured 16.5 cm. by 6 cm. The attached portion of the ureter was thickened and dilated and cutting it open was found to measure 5 cms. at its severed end. The microscopic examination of the kidney showed extensive hemorrhagic and leukocytic infiltration with distortion and destruction of renal substance. The epithelium was swollen and the cell outlines were almost obliterated.

The diagnosis: Atrophic infected hydronephrosis and large hydro-ureter.

Discussion: The lower end of the ureter is the most frequent site of obstruction. Campbell[1] found obstruction in 2 per cent of 2,420 autopsies in children and two-thirds of these were at the vesical end of the ureter. It occurred more often in the female and on the right side.

The obstructive type of hydro-ureter is not infrequently seen in the adult, while the hydro-ureter without obstruction is more often encountered in the very young. The first type is most often acquired; however, it must not be overlooked that certain strictures of the ureter in adults may be of congenital origin from a persistent ureteral dilatation after the fifth month of fetal development.

Acquired and congenital factors are present in the same cases in varying degrees. A congenital narrowing of the ureter will become completely stenotic from supra-imposed inflammatory reaction as observed at post-mortem examinations. Marked obstruction at the vasical end of the ureter will result in dilatation above both laterally and longitudinally. Early in the ureteral blockage, there is increased peristalsis, rather than hypertrophy of the ureteral walls, but, as decompensation follows, the walls become dilated, angulated and flaccid. The expected hydronephrotic changes are not always evident and the pelvic finer markings may remain undisturbed (Campbell);[2] possibly the obstruction has not been of such duration as to bring about the characteristic findings in urinary back-pressure.

Infection may ascend the ureter by direct, hematogenous or lymphogenous extension. Involvement (Scott)[3] of the lower part of the ureter in pelvic inflammation, by interfering with ureteral function, may cause dilatation of the upper part of the ureter without actual mechanical obstruction. Loose connective tissue and fat cover the ureter and not the peritoneum (Quinby).[4] These tissues are vulnerable to adhesions and accompanied by physiologically poor peristaltic waves in the lower segment of the ureter; dilatation and fixation are inevitable.

In males, the point where the vas deferens crosses the ureter is a frequent site for neuro-muscular disease. The ganglia and nerve-endings are abundant in the ureteral ends (Gruber)[5] and inflammatory by-products in this vicinity tend to initiate or accentuate a spastic condition. Some observers favor a disease primary in the neuron end-organs. In girls a persistent localized ureteral spasm has been palpated vaginally (Pratt);[6] antispasmodics have been effective in ameloriating this condition.

Valves or strictures at the uretero-vesical junc-

tion may mean failure of Chawalla's membrane to disintegrate at the 104 mm. stage of the embryo or the presence of a ureteritis in utero. Faulty development of musculature in the wall of the ureter and retardation of the nervous mechanism governing ureteral function are purported as congenital influences on hydro-ureters.

The etiology of ureteral blockage in our case does not lend itself to a ready explanation. The products of inflammation were at play as evidenced by the cellular infiltration with thickening and scarring of the ureteral wall. The line of clevage between acquired factors and a developmental abnormality is difficult to find.

SUMMARY

A case of a large segmental dilatation of the ureter is presented. The treatment was removal of kidney and upper 2/3 of the ureter with drainage of the lower ureteral segment.

Factors bearing on uretero-vesical junction obstruction have been reviewed.

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Treatment for Lockjaw.

Two New Orleans doctors have been successful in relieving dangerous and sometimes fatal symptoms of lockjaw by administering a muscle-relaxing drug. The compound, tolserol, was used previously in anesthesia and neurologic diseases. Moderately severe muscle rigidity and spasm were controlled satisfactorily in seven patients, Drs. Harold E. Godman and John Adriani of the Charity Hospital Anesthesiology Department say in the November 12th *Journal of the American Medical Association.* Doses of tolserol were given concurrently with phenobarbital, a sedative. One patient with severe symptoms did not obtain satisfactory relief from the drugs.

None of the various drugs used to control rigidity and spasm of muscles in lockjaw has proved entirely satisfactory. Treatment with tolserol has the advantage of helping keep the respiratory passages free of secretions.

Lung complications were observed in only one of the eight patients.

American Medical Association Sets up Microbiologic Laboratory.

Announcement is made of the establishment by the American Medical Association of a microbiologic laboratory. This is located in the headquarters of the A.M.A. and will be in the charge of Velma L. Chandler, Ph.D., bacteriologic associate. It will be a section of the Division of Therapy and Research.

It is stated that the microbiologic laboratory will investigate the biologic, bacteriologic, immunologic and antibiotic properties of various products which are offered to the medical profession and to the public. In addition to drugs, these include foods, cosmetics, germicides, antiseptics, beverages, serums and vaccines. The safety of these products for human use will be determined. Tests and standards will be formulated for those products for which criteria are nonexistent or inadequate. The laboratory will limit its activities to the examination of products of general interest to the medical profession. It cannot perform investigations for commercial firms or for individual physicians.

PSYCHOSOMATIC CONSIDERATIONS IN GENERAL PRACTICE*

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T. S. Eliot, in a speech at Harvard University, termed our generation the *"worried generation"*, and it is indeed remarkable how influential and consequential the part appears that is played by *anxiety* in our culture. Numerous historical, sociological and psychological studies agree that this predominance of anxiety in our culture is directly related to the structure of modern society. A technologically controlled, highly competitive social order has dissolved traditional securities, and the individual is compelled to develop greater skill of adaptation and adjustment than ever before. The times when a person could rely on previous standards, accumulations and achievements of preceding generations are over, and the pursuit of life represents a continuous struggle for prestige and security.

It is therefore not surprising that physicians should have to deal with the problem of anxiety, for, in every sickness, we can observe symptoms of threatened security and secondary fear.

Dynamic psychology, which forms the basic science for psychosomatic diagnosis and therapy, defines anxiety as an acquired, emotional defense reaction against the threat to a person's accustomed feeling of security. But in anxiety, the fear exceeds the *actual* danger. By experience and prolonged practice, anxiety may become detached from the precipitating cause, the original stimulus, and may grow into an anticipant attitude which can dominate a multitude of life situations. This dynamic background of the anxiety state is very important to our understanding.

Originally, a threatening situation creates fear, usually so early in life as to leave the relationship between cause and effect unintelligible for the involved person. A successive repetition of such fear producing events leads to a gradual "sensitization", and before the individual realizes what has happened, he will react to any alteration of his comfort with anxiousness. Gradually, a state of *chronic anxiety* is built up in which the person does not only react with fear to threats that *have* taken place, but *anticipates* the threat to his security regardless of its actual presence. This is what we call the anticipant attitude. If now an actual danger to the person's safety raises its head, his anticipant state of chronic anxiety will increase the fear, naturally to be expected, to such a degree that his reaction may resemble a state of panic.

The therapeutic task is therefore to "dissect" the individual components of the person's anxiety by making him recall the previous occasions that led to individual reactions of fear. This will make his present state of anxiety or panic more intelligible to him. For by remembering, by verbal expression and re-grouping, his anxiety will be deprived of its emotional, long forgotten and unintelligible weight. Thus, for the patient, the novelty consists of a connection between disease and recognition of behaviour patterns, retro- and introspection into past life experience and re-alignment within the given reality.

Theoretically, psychosomatic medicine concerns itself with those conditions in which anxiety and its resulting reactions of tension form the primary cause for organic manifestations which, under unfavorable circumstances, may lead to irreversible, pathological tissue changes. In practical application, however, the field is somewhat wider. It may range from preventive psychotherapy—thus including purely psychiatric disorders at the time of their recognition—to the supportive measures of allaying tension in already established organic disease.

In the latter relationship, it is evident, that psychotherapeutic measures may have to be subordinated to more immediate medical and surgical needs and, at best, may be intended to lessen persistence, progression or recurrence of the disease of the end organ. For instance, extensive studies have demonstrated the coincidence of perforation in cases of peptic ulcer and certain states of increased tension just prior to the time of perforation. But it certainly would not appear too practical to call the psychiatrist at the time of impending peritonitis. The psychotherapeutic methods ars fundamentally all analytical. They will depend on orientation, experience and training of the individual physician and the depth to which he dares to penetrate should—similar to any other branch of medi-

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cine—be limited by his qualifications.

For the purpose of this presentation, I would like to limit myself to those cases that come to a physician's office for relief from a seemingly somatic complaint. The long list of functional symptoms is well known and they often betray their symbolic significance by referring to vital and obvious organs. It is hardly necessary to stress that similar symptoms are encountered in organic disease and that—as for instance in angina pectoris—a clear cut decision is often impossible. We assume that investigative efforts have failed to substantiate pathological tissue changes. The patient and his complaint still remain with us and will usually not be satisfied with the report of a negative examination, though to some the knowledge of freedom from physical affliction may mean sufficient security to resume their daily tasks with fair courage.

In the approach to such a patient, we have to face his resistance to an emotional interpretation of his symptoms. Psychosomatic cases are characterized by expressing their emotional tension in the language and response of organs. Ruesch and his co-workers believe that this over-concern with one's body arises on the basis of an incomplete, emotional maturity; that, therefore, organic symptoms in psychosomatic disease represent an arrested development of the personality. Other investigators simply refer to such everyday symbolism in speech as "nauseating", "breath taking" and so on, as signs of connection between verbal expression and physical feeling. Now, the psychosomatic patient does not only speak, but *acts* in organ language. Since it is commendable in our culture to watch and safeguard one's physical health, it is of course exceedingly difficult to direct the patient's attention away from the responding organ toward the central cause for his discomfort—in other words, to his anxiety. For instance, during the treatment of such patients, we frequently see the following succession of events: The end organ is treated symptomatically, and the patient begins to feel better. Then, suddenly or gradually, he becomes anxious all over again and returns with another complaint, referring to another organ. Let us assume that it appears this time necessary to remove the affected organ by surgery. He improves, but again the anxiety returns and mounts, and the more organs are—to say so—"taken away from him" the more anxious the person becomes, this, because, in spite of anatomical and physiological corrections, the underlying tension has not undergone any reduction. Therefore, if the general anxiety is lessened at the expense of an organic concern or disorder, a vicious circle is invited. It begins with primary anxiety and its expression, on an organic level, continues with concern about this particular organ and about the obvious failure in treatment or permanent improvement of this organ. It finally closes with intensified anxiety due to such failure and renewed and reenforced organ expression.

Furthermore, misinformation, prejudice and misunderstood morality, and often an ascetically directed education pattern, have produced a frame of mind in which the patient will feel guilty when told that his sufferings could be the result of a conflict situation within himself or between himself and the surrounding world. On the other hand, a disease produced by a germ, plainly physical in character, will not burden his morality with personal responsibility and consequent depreciation of his self-esteem.

Therefore, we have to prepare the patient for psychotherapeutic approach. We have to judge his emotional readiness and potential maturity to accept certain facts about his own person. It should be explained to the patient, on his own level of understanding, how "mental anguish" can produce physical signs. One may utilize such standard examples as blushing of the face, diarrhea when in fear, fainting at the receipt of bad news, and many other observations within our accustomed, daily surroundings. Then one may discuss with the patient—who still stands firmly on the organic point of view and usually insists that he has no fears and no worries—the possibility of interaction between "*a*" person's emotions and reactions, and if the examples were taken from the material the patient unknowingly has already presented, he may quite unexpectedly apply some of these "objective" observations to himself; in other words, he may begin to gain insight.

We implement this process of "feeling" the patient "out" by information about his surroundings. Frequently, the circumstances under which a person lives or works are obviously incompatible with the demands of a sensitive or anxiety-sensitized individual, and thus we would be called upon to treat the victim instead of the perpetrator. This would often exceed the possibilities of psychotherapy

which could then only relegate the organic expressions of discomfort to the psychological or social level where actually they belong.

At this stage we would have to decide to what form of psychotherapeutic approach the patient may be best suited, which, to summarize, should be based on the following evaluations:

(1) The seriousness of the psychosomatic disturbance in terms of decreased social efficiency.
(2) The absence or secondary importance of pathological tissue changes.
(3) The patient's personality, as to age and potential maturity.
(4) The patient's social surroundings.

Five brief case presentations may serve as illustrations. All these cases have several features in common. They all had a decided desire to get well, they all had several, if not many physicians, and in all the emotional disturbances were somatically expressed.

Case 1.—A young woman complained of severe itching, all over her body. No scratch marks were visible, but the itching was severe enough to interfere with her sleep. A dermatologist explained to the patient that her condition was of nervous origin, then gave her an antipruritic lotion. Routine physical and laboratory examinations were negative. When I attempted to confirm the previously expressed opinion of the dermatologist, her attitude changed from rather passive enumeration of her symptoms to outright hostility. I changed the subject of discussion by asking a few questions about her family with whom she lived while her husband was overseas. She suddenly began to cry and related a rather unhappy marriage of her parents which, by the way, ultimately ended in suicide of her father.

Then she told that her own marriage, prior to the husband's departure, had been something of a "high school affair," but that recently she had fallen in love with a more mature man and felt unable to resume her marriage—the husband was about to return—under whatever pretense or sacrifice. Without further coaching she asked whether her skin condition could have anything to do with her problem. This was left unanswered, but when she returned for further discussion of her marital difficulties, she remarked quite casually that the itching had ceased entirely.

This case demonstrates the following factors in an anxiety pattern which is physically expressed in disturbed skin sensation; the insecure parental home, the impending repetition of her parents failure in life by herself, and the threat of being ostracized. It also shows that the physical manifestation did not yield to explanation but to insight.

Case 2.—A forty year old man came to the office for confirmation of a self-made diagnosis of inguinal hernia. Actually he had only rather harmless, external hemorrhoids. At any event, he had been going on about his business timidly in fear of an operation and incapacitation. The predominant symptoms had become noisy eructations after supper which he took at home. Since examination and x-ray studies did not show any organic lesion except for moderate hyper-peristalsis, I felt free to ask him a few questions about his personal affairs. He told that a quick succession of war time promotions had come to a standstill, that he held a government job which he was not even sure would be continued. His gastric symptoms appeared at about the same time. He also related that recently libido and potency had markedly decreased and that his wife—without justification—suspected him of infidelity. With this, first his marital relations, later on his entire family life had become quite unpleasant to him.

He was step by step enabled to admit to himself the fear of competition with better equipped fellow workers who at the war's end would be available in greater number, how he had misunderstood and avoided the issue of physical incapacity and had carried those depressing feelings into his family life. Here we notice amongst the anxiety producing factors the patient's age. In middle life, man begins to see the horizon of his days and may express his concern in fear for his physical health.

Case 3.—The third case concerns a 45 year old man who suffered from repeated attacks of paroxysmal tachycardia. Several cardiologists saw the patient and explained to him the absence of organic disease. The history revealed that the first attack occurred shortly after the unexpected death of his brother-in-law, supposedly from coronary occlusion. Moreover, he professed a somewhat more than friendly attraction for the deceased man's wife who was his own wife's sister.

His occupational career was mediocre when contrasted with his mother's ambitions. The mother

had been deserted by an alcoholic husband when the patient was still a small child. Her attitude to the son was over-protective and over-ambitious. While still in college, he had married a girl three years his senior and this marriage was terminated two years later without too much of an upset. His second marriage to a more mature and maternal woman was marred for him by the fact that it lacked his juvenile prescriptions for previous celibacy. Meanwhile all his difficulties were vented on a somatic level. He saw many physicians. Once he complained of urinary frequency and was examined urologically. Here he was informed that he was sterile. With the confusion between sterility and potency, commonly encountered in laymen, his concern began now to center around his fitness as a man. After his brother-in-law's death, he began to associate any discomfort he felt with his heart. At this stage of our conversation, he accepted referral to a psychiatrist and freed himself of much of his physical over-concern.

The outlines of this case can show the profound influence of an over-protective mother, especially in the absence of a sound father relationship and the shifting location of physical concern according to the identifications in a given, external situation.

Case 4.—I selected this case for several reasons. First of all, actually it represents a combination of cases and situations within the same family; second, I was able to observe and follow up the individual members of the family over a prolonged period; and third, therapeutically speaking, it is an admission of defeat, and, last, they all still go on pursuing rather useful lives in spite of theoretical and practical difficulties they daily encounter.

First to be seen was the wife. Her complaints were extreme nervousness and unbearable pruritus ani. The whole area surrounding the anus was eroded by scratch marks. An unending series of examinations and consultations revealed nothing, though symptomatic treatment afforded occasional relief. Then came a year of organically conditioned dysmenorrhea which was psychogenically so concealed that a ruptured appendix was almost overlooked. After appendectomy, the pruritus subsided. A little later she developed suddenly—for it had been repeatedly investigated—toxic hyperthyroidism and underwent a thyroidectomy with good results. Here again appraisal of the situation was complicated by the fact that the patient came from the goiter belt, and mother and an older sister had previously undergone thyroidectomies.

Another year later adenomyoma necessitated hysterectomy, and one should have expected that peace would return to the patient. But meanwhile the husband went through a strange collection of illnesses. He was examined and treated for sinus headaches, migraine, radiologically proven duodenal ulcer, which healed under dietary management, and finally developed neurological signs which competent examiners were unable to explain or to disprove, but which disappeared in due course without treatment. Suddenly, he became restless in his job, which he had held with high proficiency for more than twenty years, went into an enterprise of his own, worked hard but achieved little. At the cessation of his physical symptoms, the wife, and not for economical reasons alone, took a secretarial position with a rather difficult employer, while two adolescent daughters began to present problems which the mother could probably have managed better by staying at home. When she finally gave up her position to restore the continuity of domestic life, she developed persistent diarrhea the cause of which could not be diagnosed. Besides, her cooperation became less wholehearted; she said she did not want to be any more trouble to husband and doctors. Everytime the diarrhea subsided, the pruritus re-appeared. Finally, without much deliberation, they sold their home, went to another city where the husband continued work with the old national company and even improved his position. Things went fine, but after one year in the new city, the diarrhea recurred. She was again investigated and x-ray studies showed the typical picture of advanced ulcerative colitis. This finally led to resection. Then both children again became problems. The younger one left High School shortly before graduation. The older married against her parents consent, but continued to live in their home. I learned recently that, after prolonged treatment for some gastric disorder, she underwent a gynecological operation with negative findings.

This history shows very obvious difficulties in interpersonal relationships as precipitating factors in illness. The polysurgery of mother and daughter is of interest, but I feel that such a family situation is not amenable to fundamental treatment. All participants would strongly reject the theory of underlying hostilities and would proclaim their

mutual devotion. Their somewhat muddled form of happiness seems better than what therapy which might endanger their social ties could promise.

And so I mentioned this case as an alibi that sometimes one may recognize the psychosomatic connections and still prefer to continue therapy of the end organ.

Case 5.—This last case concerns a highly respected and intelligent college teacher from a Northern town who married when she was 24 years old. Prior to her marriage she suffered from mild dysmenorrhea. About one year later, she had recurrent, lower abdominal pain; a subacutely inflamed appendix was removed and, at the same time, a rigid hymen incised. Several months after the appendectomy, the dysmenorrhea increased markedly, a gynecologist did a cervical dilatation and, since this seemed to afford no relief, the physician advised pregnancy as a cure. As the patient failed to become pregnant, fertility tests were made on husband and wife; the husband was declared sterile and adoption of a child recommended. After adoption of the child the dysmenorrhea became unbearable; besides, she began to realize that since the beginning of her marriage dyspareunia and frigidity had existed, and did not seem to improve. She consulted her priest who advised her to see a psychiatrist. This advice frightened her, but she came for a "general check-up". The examination was negative but in rather prolonged conversation she was induced to consider her frigidity as the primary problem. Interviews revealed a serious disturbance in relationship to her father. The mother, a rather difficult character herself, had reared the child with considerable hostility towards the father and to men in general. As she grew up, she began to question the mother's wisdom but remained very ambivalent under a cloak of openly displayed parental affection. As the patient became able to speak about these feelings freely she began to assume a more realistic attitude towards both parents, became less anxious, dyspareunia, frigidity and dysmenorrhoea subsided gradually. Psychotherapy lasted about four months. Half a year later, she became pregnant and had an uneventful delivery.

With regard to frigidity, I would like to remind, it is often assumed that absence of genuine love for the partner is the decisive factor. Closer study usually reveals a conflict in the affected person's parent-child relationship. After all, the first man and woman everyone meets are father and mother, and from then on, unconsciously but mostly rather conspicuously, we compare to them any new person we encounter in our lives. The often very considerable age difference in marital partners is an expression of normal longings for father—or mother-like love. This may throw some light on the observation that whenever adjustment difficulties present themselves, the source must not necessarily be the partner but also can be the disturbed person's relationship towards parents and subsequent identification and comparison with the partner.

Patients often ask, "Do I imagine this pain"? No pain is considered "imagined". A migraine headache may be as painful as any form of increased intracranial pressure. The pain is also not simulated because no specific gain is consciously intended. The conversion from emotional conflict to organically expressed symptoms occurs against the patient's will and without their knowledge while it happens. I think it is important to convey this opinion to our patients since it will lessen their guilt feelings when psychological approach of their disease is attempted. This I would like to demonstrate in a few examples:

A very frequent complaint in obviously healthy persons with a sufficient amount of sound sleep is "Fatigue". They wake up in the morning just as tired as they went to bed. If one occupies one's self with such cases long enough, one will often find a life situation which these people are reluctant to face. They would rather escape into unreality of dreams and sleep. In other words, these patients express in their physical need for excessive sleep a desire to retreat from life with its inherent dangers and displeasures. Yet, they do not *pretend* fatigue and are often greatly embarrassed by their inability to perform their set tasks.

Another, commonly encountered symptom is that type of headache that defies all methods of diagnosis and treatment. The layman, when confronted with particularly difficult problems, may say: "It gives me a headache". Thus he refers an extracranial event to the cranium and, just as in organic medicine, headaches are felt in cases of duodenal diverticulitis, in cervical arthritis, etc. A headache may be extracranial in life situations or psychological difficulties of the individual.

Similarly, we may speculate on gastric symptoms:

In Kaufman and Harts Broadway Comedy, "The Man Who Came To Dinner", the chief character, Sheridan Whiteside, is rolled on stage in a wheelchair. Looking at the people who surround him, with obvious disgust, he exclaims: "I may vomit", which specific reference to his gastro-intestinal tract certainly represents an "extra-gastric" cause. The direct influence on the "soma" may be faulty diet, eating habits, and so on, but if one considers how many people, in spite of better knowledge and in spite of actual suffering, punish their stomachs, this observation could lead to the suspicion that certain irrational, self-defeatist trends in a person's character prevail and that then these dietary habits become merely the path on which he commits gradual self-destruction.

When the psychological causes are considered, the terms "security", "anxiety", and "tension" come again to the fore. The actual or felt threat to a person's security is answered with anxiety, and it is this anxiety which is so often expressed in somatically fixed tension.

The somatic manifestations occur in any anatomical region or physiological system. Their location is of practical diagnostic and prognostic value, for the somatic location may express the psychological connection.

The human being grows from an initially only *passive* baby into a socially adjusted, *active* adult person. During infancy, the necessary disciplinary measures are accepted and answered on an entirely emotional basis. The child is told what is good and bad; it is brought up by approval and disapproval. The demands for cultural adjustment provoke anxiety, and are answered with so-called "adjustive technics". These technics may be generally divided into those of aggression and withdrawal, and we consider the inappropriate application of these technics as abnormal when they result in decreased effectuality. As the merely biological functions of sleeping, food intake and excretion take up different meaning during growth, the adjustive technics change. For instance, an infant may react to scolding with tears, a child with spite. The same goes for the higher functions which are perfected later. When now, insecurity, anxiety and tension imperil the individual beyond the development of satisfactory adjustive technics, it may *regress* into previously conceived, one may say—time tested— devices in the direction of greater passivity. Greater passivity can be achieved in psychosomatic sickness, of which we may therefore say that it represents a *"regression"*. And since we saw that the adjustive technics correspond with the emotional age level, their somatic expression can indicate the *degree* of the regression and be of diagnostic importance. I will try to show this with the example of food intake. The baby is fed, the child eats, the adult partakes of a meal to which considerable ritual may be attached. If we see an apparently healthy individual suddenly refuse to eat unless food is more or less forced down his throat, when he begins to make demands on particular persons of his environment to perform this task for him, then we may presume that he has regressed to an emotional level in which he desires to be "babied" or dependent. This may happen only in regard to one particular person, but may also express his affective attitude to the world in general. Obviously such nervous anorexia, as is found in children and adults, is not a gastric affliction, but it may be helped by a "tonic", probably insofar as the tonic represents the kindly physician who accepts the role of the desired feeder.

As for prognosis, the relationship between a person's actual age and the development level of his symptoms will indicate how deep seated a disturbance is, how long it would take to bring it to awareness and therewith to curative insight.

A frequently encountered objection against psychotherapy is the amount of time to be spent by patient and physician alike. As for the patient, he should gauge this himself by the degree of his incapacitation. The physician may find that judicious application of modern, psychotherapeutic techniques will pay dividends in more permanent results and compare favorably with the time and effort spent in dealing out placebos. If we consider the large number of functional patients that are seen in daily general practice, I believe that any method that holds a certain promise to avoid chronic illness and subsequent social failure may be worthwhile trying.

A METHOD FOR THE PREVENTION OF SUICIDAL DEATHS CAUSED BY THE BARBITURIC ACID DERIVATIVES

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The increasing complexity of our modern civilization; the saving, through chemotherapeutic agents, of our population for the lingering and painful degenerative diseases; the failure of our society to admit the existence of human frailities; and the apparent decrease in individual security—all are contributing to the everpresent temptation to seek escape through suicide.

Every year many more than 100,000 people in the United States find life so hopeless and themselves so helpless that they unsuccessfully attempt to seek death by their own hands[1]. Another 13,000 to 30,000 people are successful each year in this attempt. Each year barbituric acid and its derivatives play a more important role in this melancholic situation. The incidence of the employment of barbiturates for this purpose in 1946 was 561% of their incidence in 1932[2].

It has been estimated that the mortality rate of barbiturate poisoning is 7.3%[3]. In other words, in 1946, 7,500 people in the United States attempted to commit suicide by the use of the barbituric acid derivatives.

There are several factors which account for this unbelievable increase in the selection of the barbiturates as the lethal weapon. Of primary importance is their availability. Not only do the hopelessly ill frequently find themselves in possession of a small bottle containing the power of solution to their pitiful plight, but also do physically well, but perhaps emotionally overwrought, patients find themselves likewise tempted upon every visit to the family medicine cabinet. Some of these people would never think of a suicidal solution were it not for the presence of the drug. Still others would find their situation an improved one if they could but hang on for a little while. This temptation will exist as long as the laity finds it possible to purchase such power without a prescription from a few pharmacists of questionable reputation, and as long as certain few physicians continue to allow patients to have large numbers of these capsules or tablets at one time. Of course, no one can prevent a patient from hoarding them.

Another factor in the increased use of barbiturates with suicidal intent relates to their popularity among people who are famous enough to have their suicides given national publicity. After such an incident, there is always a wave of suicide throughout the country, predominantly among the small, unheard-of, trampled-upon or loveless individuals who see a similarity between their problems and those of the suicide victim about which they read in the newspaper. Naturally they choose the same means of solution.

The last factor involved in this increase is the common knowledge of the relatively pleasant and easy death dealt by these products.

It would be disastrous enough were this the whole picture. It is not. Another 1,500 individuals, mostly children, die yearly due to the accidental ingestion of poisons found in the home, and the barbiturates not only are the most frequent cause of these accidental deaths, but they appear as the cause four times as often as the second most frequent cause[4].

The use of the barbituric acid derivatives in the United States has reached appalling proportions. Hambourger estimated that, in 1936, 97,200,000 gms. of these products were manufactured in this country and that 73,140,000 gms. were sold, representing 800,000,000 doses per year, which is more than 2,200,000 doses per day[5]. If 2.7 gms. were to be considered a lethal dose, then in 1936 enough of these drugs were manufactured to create a potential suicide number of over 40,000,000 people. McNally stated that in 1939 there had been a 100% increase in their manufacture over 1936[6]. This is unbelievable, but it is true.

It is imperative, therefore, that steps be taken to follow the example set in other fields. The time has come to protect the individual from himself.

The following presentation represents an attempt to do just that by combining with a barbituric acid derivative an emetic in such proportion that, with a sedative dose of the barbiturate, the emetic would produce no effect, but, with a lethal dose of the barbiturate, the efficacious dose of the emetic would also be reached. All experimentation was done on well dogs condemned to death in a lethal chamber, and no work was begun until the scheduled day of death for each individual dog had passed.

Much has been written in lay publications regarding the barbiturate hazard, and some mention has been made of the use of ipecac as an agent of control. The experimentation described here was begun in August of 1948, before the appearance of these articles.

The emetic had to be selected carefully. It was apparent that the drug of choice would have to be prompt and reliable in its action, to be relatively free from danger, to produce emesis by gastric irritation and to be without effect on the action of the barbiturate. Several emetics were tried and discarded because of their failure to meet these requirements. Finally, it became apparent that zinc sulfate would serve best in this capacity.

Zinc sulfate was chosen in place of ipecac because of the following important differences. Ipecac is not so constant and not so certain in its action. Ipecac is not free of toxicity. Ipecac produces vomiting by a combination of central and local action and it is imperative that, for this purpose, a purely locally acting emetic be used, because, if emesis has to await absorption, then the barbiturate taken at the same time as the emetic will be below the pylorus when emesis occurs. Zinc sulfate is faster in producing emesis and should no emesis occur it is not absorbed. Zinc sulfate is constantly active on a full stomach. Zinc sulfate is cheaper. Except for emesis, the desired effect, no effect was observed on any dog from the use of zinc sulfate. Ipecac has some depressant action.

TABLE I

CONSTANCY OF ACTION OF ZINC SULFATE

Amount of zinc sulfate (gms.)	Emesis	Time (Min.) Dog #1	Dog #2	Dog #3
0.3	Yes	60	50	60
0.5	Yes	40	50	40
0.5	Yes	50	40	40
0.5	Yes	40	50	55

The constancy of the action of zinc sulfate can be seen in the results shown in Table I. The certainty of its action is described in Table II.

TABLE II

CERTAINTY OF ACTION OF ZINC SULFATE

Zinc sulfate, in the proper amount, produced emesis in every dog to which it was given regardless of the amount of gastric contents.

After the decision had been made to confine all further work to zinc sulfate, weeks of trial and error were required to establish the emetic dose of this drug alone and in the presence of a barbiturate. All dogs used weighed between 11.3 and 13.6 Kg. (25-30 lbs.). Pentobarbital sodium was the barbituric acid derivative chosen. Raw ground beef was used throughout these experiments as a means of disguising the capsules used. In each case a large, simple gelatin capsule was used. Each of these capsules contained 0.1 or 0.2 gm. of zinc sulfate and, if the barbiturate was to be used, one capsule (0.1 gm.) of the latter was also placed in the large gelatin capsule. At least three days were allowed to elapse between each succeeding step.

Table I shows the dosage of zinc sulfate alone necessary to produce emesis. Table III indicates the dosage of zinc sulfate required to produce emesis in the presence of pentobarbital sodium.

TABLE III

Amount zinc sulfate (gms.)	Amount pentobarb. sodium (gms.)	Emesis	Time (Min.)	Result
0.1	0.1	0	—	sedation
0.5	1.0	0	—	a-c-r-*
0.6	0.3	0	—	sedation
1.5	1.5	0	—	a-c-r-*
5.0	2.5	Yes	80	no sedation

*ataxia-coma with recovery.

It is important to note that the emetic dose was constant among all dogs. It is also of interest that, in the presence of the barbiturate, about five times the emetic dose of zinc sulfate alone was required to produce vomiting. This suggests that there must be some local depression by pentobarbital sodium and that all of its action is not central. In each case gastric emptying was complete, and in each case, in

doses less than the emetic dose, there was no increase in salivation, indicating an absence of nausea.

It was also discovered that what was an emetic dose, when given in one capsule, did not produce emesis when this same amount was divided among several capsules. As is shown in Table IV, the emetic dose of zinc sulfate given in one capsule was not efficacious when that amount was divided among five capsules, though the capsules were administered simultaneously. Because of this realization, all future capsules contained 0.2 gm. of zinc sulfate.

TABLE IV

Amount of zinc sulfate (gms.)	Number of caps. used	Emesis	Time (Min.)
0.3	1	Yes	60
0.5	1	Yes	50
0.5	5	0	—
1.0	10	Yes	70
0.5	1	Yes	40
0.5	1	Yes	50
0.5	10	0	—
0.8	8	Yes	115

Once these relationships were established it became necessary to establish the fatal dose of pentobarbital sodium for dogs of this weight. This was done by giving increasing amounts of zinc sulfate and pentobarbital sodium, and after each successive step increase, and after each emesis from this combination, the same dose of pentobarbital sodium was given alone, after an adequate recovery period. If this dose was not fatal, the next step increase using the combination was carried out. Since in several dogs 2.5 gms. was not a fatal dose, it was decided

TABLE V

Amount of zinc sulfate (gms.)	Amount of pentobarb. sodium (gms.)	No. of caps.	Emesis	Time (Min.)	Sedation	Dog No.
8.0	4.0	40	Yes	80	0	5
8.0	4.0	40	Yes	60	0	6
8.0	4.0	40	Yes	60	0	7
8.0	4.0	40	Yes	60	0	8
8.0	4.0	40	Yes	60	0	9

to use an amount enough over that to insure fatalities. Forty gelatin capsules were then used. Each contained 0.2 gm. of zinc sulfate and one capsule (0.1 gm.) of pentobarbital sodium, making a total amount of 8.0 gms. of zinc sulfate and 4.0 gms. of the barbiturate. Each dog received 0.45 kg. (1 lb.) of ground beef with this combination. The results of this are tabulated in Table V. This and succeeding steps were done on dogs which had not received any previous drugs.

It is important to note the extreme constancy of action and the almost identical times of emesis. No emesis contained any whole or partial capsules. All had been dissolved. No dog showed any evidence of sedation. Therefore, emptying must have been complete. No dog exhibited any untoward after-effect. All were willing to eat again one hour or less after emesis.

Then, and finally, to prove that death would have ensued had the zinc sulfate not been present, the same dose of pentobarbital sodium without zinc sulfate was given to the same dogs by the same method. It can be seen from Table VI that it was a fatal dose for each dog.

TABLE VI

Amount of pentobarb. sodium (gms.)	Number of caps.	Fatal	Time (Hrs.)	Dog No.
4.0	40	Yes	10	5
4.0	40	Yes	10	6
4.0	40	Yes	12	7
4.0	40	Yes	16	8
4.0	40	Yes	10	9

The authors beseech the Council on Pharmacy and Chemistry of the American Medical Association to require the incorporation of this protection in all barbituric acid derivatives before their acceptance and approval. This single act could prevent all future planned and accidental deaths from this cause.

SUMMARY

I. The factors which are relevant to the rapidly increasing incidence of suicide and accidental death by the barbituric acid derivatives are discussed and the need for control of this situation is stated.

II. Experiments upon dogs are described and the results tabulated. In these experiments the following investigations were carried out:

A. A search was made for the best emetic of local action.

B. The effect upon these emetics of the presence of the barbituric acid derivatives was studied.

C. Conclusions reached in these experiments:

(1) Zinc sulfate is the most constant and cer-

tain emetic both alone and in the presence of the barbituric acid derivatives.

(2) In the presence of the chosen barbiturate, the dosage of zinc sulfate required to produce emesis was five times the amount required of zinc sulfate alone.

(3) This fact suggests that the chosen barbiturate has some local action on either the gastric mucosa or on the nerve endings in the gastric wall.

III. Experiments upon dogs are described and the results tabulated in which zinc sulfate was combined with a chosen barbiturate and the combination given in sedative and in fatal amounts. The following conclusions were reached:

A. With this combination the usual sedative dose of the chosen barbiturate produced the usual amount of sedation without any evidence of nausea.

B. With this combination an estimated fatal dose of the barbiturate produced not even sedation because of complete gastric emptying by emesis.

(1) This effect was produced by zinc sulfate even upon a full stomach.

(2) No after effects were noted.

IV. The above mentioned estimated fatal dose of the chosen barbiturate given alone proved fatal to these same dogs in every case.

V. A plea for control of these dangerous agents by this method is made.

VI. The authors plan to carry this experimentation out upon all other solid and liquid household poisons.

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Are asked to volunteer for short periods of active duty of from one to 29 days a month, not more than 90 days of active duty during the fiscal year. This plan will alleviate the critical shortage of this personnel in the Air Force, and duty will be performed at the Air Force bases convenient to the locality where these doctors reside. Such duty will be performed in the grade in which the officer is currently commissioned in the U. S. Air Force Reserve, with full pay and allowances.

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Warn of Ill Effects From Overdoses of Aspirin.

A warning that aspirin acts as a poison when taken in too large doses is given by three Philadelphia doctors.

Excessive amounts of the drug have a toxic effect on the brain, kidneys, and other organs, Drs. Bernard L. Lipman, Sidney O. Krasnoff, and Robert A. Schless point out in the October issue of *American Journal of Diseases of Children.* They report five cases of poisoning from overdoses of aspirin. Three patients were children, and there were two deaths in the series.

SURGICAL ASPECTS OF NEUROFIBROMAS*

CARRINGTON WILLIAMS, JR., M.D.,
Richmond, Virginia.

In discussing the surgical aspects of neurofibromas, we must consider two distinct disease entities having a common origin—first, von Recklinghausen's disease, and, second, isolated neurofibromas.

Neurogenic tumors are some of the most interesting encountered, and benign tumors of neural origin often present bizarre and unusual pictures. The occurrence of tumors of peripheral nerves has long been recognized, and their clinical course and morphology have been subjects for considerable discussion. It is generally agreed that neoplasms of nerve trunks arise from the coverings of nerve fibers or of entire nerves, and the finding of true "neuromas" (derived from nerve fibers themselves) is unusual. These tumors, then, may take their origin from the epineurium, the perineurium or the endoneurium (Penfield). These lining structures are usually thought to be mesodermal in origin, and hence tumors arising therefrom are considered to be connective tissue tumors. The term *neurofibroma* is the one most commonly employed to designate a tumor arising from one or more of the component sheaths of a nerve trunk. Some pathologists feel that the sheath of Schwann (which surrounds an individual nerve fiber) has an ectodermal derivation, and Stout has proposed the term *neurilemoma* to distinguish a tumor arising in this structure from the ordinary *neurofibroma*.

In 1849 Robert W. Smith, of Dublin, first described the clinical picture of diffuse neurofibromatosis, but we know this disease primarily through the writing of von Recklinghausen in 1882. The three classical features of von Recklinghausen's disease are neurofibromatosis, skin pigmentation (the so-called café au lait spots), and associated defects in skeletal and mental development[1]. The most obvious manifestation of this syndrome is the appearance in the superficial tissues of multiple soft tumors which arise from branches of peripheral nerves. These may be so diffuse as to number up to 5,000 visible tumors. One interesting feature of the disease is that it has a strong familial tendency. The severity of the involvement in each patient varies, and great increase in the number and size of these tumors may accompany puberty, pregnancy or serious constitutional illnesses. The etiology of the disease and the cause of these periods of hyperactivity are unknown, and, consequently, there is no specific treatment.

On the other hand, cases occur in which individual tumors present certain indications for operation. In an excellent article discussing this problem, Jones and Hart[2] list as the indications for surgical intervention: (1) pressure from tumor growth resulting in impairment of function of neighboring organs, (2) development of malignancy, and (3) hemorrhage into a pachydermatocele. The several varieties of neurofibromas include the small, soft tumors in the skin and fat; the huge, firm fibroma molluscum; the large, baggy plexiform neurofibromata; and the soft, degenerating tumors with necrotic centers and hemorrhage (the so-called pachydermatocele). Diffuse involvement of an extremity may result in a peculiar form of elephantiasis.

By far the most common symptom requiring surgical intervention in von Recklinghausen's disease is impairment of function of a neighboring organ due to tumor growth. The following case report will indicate the extent to which this disease may deform the body.

Case 1—J. B. T. This patient is a 55 year old white male who was born with a deformity of the spine and a defective right eye. He had skin tumors from his earliest recollection, but during adolescence many tumors became noticeable. These continued to grow larger, and several became large enough to cause symptoms. Several years ago an attempt was made to excise certain of these tumors on the face, but the operation had to be terminated prematurely because of excessive hemorrhage. He was first admitted to the Medical College of Virginia Hospital in 1944, and excision of one tumor on the forehead and one in the right temporal region was performed. In 1945 a blepharoplasty was performed on the right eyelid because of deformity resulting from his disease. In 1948 the patient again was hospitalized because of recurrence of the tumors in the

From The Surgical Service of The Medical College of Virginia Hospitals.
*Read before the annual meeting of the Medical Society of Virginia, at Fort Monroe, Va., October 9-12, 1949.

right temporal region and forehead and he now complained that his hat did not fit because of the tumors. These two growths were again excised, and pathologic examination revealed neurofibroma.

Comment: This case illustrates well the three cardinal features of von Recklinghausen's disease, namely, multiple tumors, skin pigmentation and skeletal maldevelopment. In such a severe case, it may be necessary to remove an isolated tumor, but this is purely for palliative and symptomatic relief.

Of much greater interest to the surgeon are cases where neurofibromas are found as solitary tumors. Such instances are discovered only when tumor growth causes symptoms by pressure on neighboring structures. Strangely enough, these tumors do not usually cause pain radiating along the involved nerves, but they may cause paralysis due to pressure. Favorite sites for development of isolated neurofibromata are the thoracic and abdominal cavities. In the thorax, a neurogenic tumor may arise from the intercostal nerves or from the sympathetic chain. In the abdomen, neurofibromas have been reported in many organs, and large isolated tumors have been found retroperitoneally.

Intrathoracic neurofibromas most frequently are mediastinal and less often occupy a position in the chest wall. They constitute the most common tumor of the posterior mediastinum[3]. Mediastinal neurogenic tumors should be regarded with the greatest respect. These tumors should always be removed unless specific contraindications from coincident disease exist. Contrary to the usual thought, malignancy is not uncommon, and Blades[4] has found an incidence of malignancy of nearly 40% in all mediastinal tumors and up to 14% in neurogenic tumors. In addition to the threat of malignancy, other specific indications for surgical treatment of mediastinal tumors are increase in size and development of related symptoms. Many of these tumors are discovered accidentally when an x-ray is taken, but nearly all of them eventually will cause some symptoms. Occasionally neurofibromas originate in the intervertebral foramen and extend both into the thorax and into the spinal canal, forming the so-called "hour-glass" or "dumb-bell" tumors[5,6]. These usually cause paresis due to compression of the spinal cord.

The symptoms caused by intrathoracic[7] and intra-abdominal[8] neurofibromas are such general complaints as pain, cough, dyspnea, digestive disorders and occasionally disturbances in the autonomic nervous system (e.g., Horner's syndrome). Once the tumor has been discovered and diagnosed, operation should be performed, since operative removal is the only successful method of treatment[9]. X-ray therapy is of no value in neurofibromata, but may be used to differentiate mediastinal lymphoma when other methods have failed. This form of treatment should not be pursued indefinitely when a good response is not forthcoming; indeed, failure of the tumor to regress under radiotherapy constitutes a definite indication for operation[10].

The following case reports illustrate the protean manifestations of large isolated neurofibromas and indicate the method of study in the differential diagnosis.

Case 2—E. L. E. This patient is a 64 year old white male who entered the Medical College of Virginia Hospital on January 16, 1949. He gave a three year history of postprandial burning pain in the epigastrium radiating upward beneath the sternum. There had been no vomiting, hematemesis or melena, weight loss, or jaundice. Relief from discomfort was obtained by taking bicarbonate of soda. A week before entry he developed abdominal pain, and was referred by his physician to a roentgenologist. He was subsequently admitted to the hospital with a presumptive diagnosis of neoplasm of the left kidney with pulmonary metastasis. On admission to the hospital physical examination was not remarkable except for the presence of a vague mass in the left upper abdomen. All laboratory work was within normal limits. X-rays of the chest showed a large posterior mediastinal tumor (Fig. 1). Gastro-intestinal series, barium enema and intravenous pyelograms revealed displacement of the stomach, the splenic flexure of the colon and the left kidney by a large mass (Fig. 2). By means of an artificial pneumoperitoneum the mass was found to be distinct from a normal sized spleen and appeared to be retroperitoneal. The presence of masses in the posterior mediastinum and in the retroperitoneal space suggested the possibility of neurofibromata, and surgical exploration was advised.

On January 25, 1949, under endotracheal anesthesia, exploratory thoracotomy was performed through a left postero-lateral approach, the ninth rib being totally resected. The mediastinal tumor

Fig. 1. Case 2. Left lateral chest x-ray showing large rounded tumor in posterior mediastinum.

Fig. 2. Case 2. Gastro-intestinal x-ray showing displacement of stomach and duodenum to right by large retroperitoneal mass.

measured 12 by 8 centimeters and was excised without difficulty. It arose in the paravertebral gutter. The left diaphragm was then opened, and the retroperitoneal space explored because of a large mass presenting here. This tumor measuring 16 by 13 centimeters was removed from its location between the pancreas, the left adrenal gland and the left kidney. The diaphragm was sutured and the thoracotomy wound was closed in layers. The patient's postoperative course was satisfactory and he was discharged on the thirteenth postoperative day.

Pathologic examination revealed that both tumors were neurofibromas (Fig. 3).

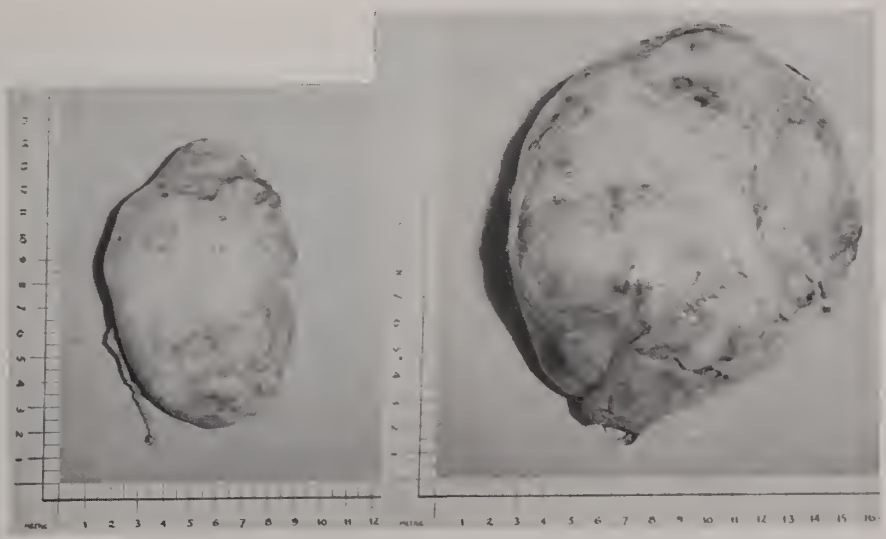

Fig. 3. Case 2. Gross specimens of neurofibromas removed from posterior mediastinum (left) and retroperitoneal space (right).

At the present time the patient is essentially asymptomatic and no longer suffers from postprandial discomfort.

Case 3—E. L. B. This is a 29 year old married colored female who was admitted to the Obstetrical Service of St. Philip Hospital on December 26, 1948, and was delivered of a living child. Because of an acute upper respiratory infection, an x-ray of the chest was obtained on the day after admission. This was interpreted as showing an encapsulated cyst in the left posterior chest, measuring 6 by 7 inches. The clinical impression was that this was a neurofibroma of the posterior mediastinum and operation was recommended. She was first sterilized and advised to return later for thoracotomy.

Attempts were made to have her hospitalized, but the patient refused to be admitted. However, in the summer of 1949 she began having for the first time pain in the left chest, arm and neck, and slight exertional dyspnea. There was no cough, hemoptysis, or peripheral edema.

The patient was finally admitted to the Surgical Service of St. Philip Hospital on August 25, 1949, and physical examination revealed obesity and diminution of voice and breath sounds over the left lower chest. There were no cardiac irregularities, edema or venous congestion. The laboratory work, including an electrocardiogram, was not remarkable. X-rays showed a "well circumscribed density 20 by 16 by 18 centimeters in the left lower lung field posteriorly, displacing the heart slightly to the right, with tumor favored over cyst" (Fig. 4).

Fig. 4. Case 3. Chest x-ray showing very large tumor in left side of thorax.

Operation was performed on August 29, 1949, by Dr. K. K. van Slyke. The left seventh rib was resected and the large tumor removed from the posterior mediastinum without difficulty.

After operation the patient had a prolonged convalescence but slowly recovered and was discharged from the hospital on September 23, 1949.

The tumor measured 14 by 21 by 9 centimeters and weighed 1,600 grams. The pathologic diagnosis was neurofibroma, rich in ganglion cells (Fig. 5).

Comment: These two cases emphasize the importance of removing large neurofibromas when they are discovered. In both instances the tumors undoubtedly had been present for some time, and they were operated upon when they caused symptoms because of increase in size. It is important to remove intrathoracic neurogenic tumors because of the threat of malignancy and because continued growth leads to impairment of function in the intrathoracic viscera[11,12]. In *Case 2* the tumors gave rise to symptoms at the late age of 64 years, but in *Case 3* (where growth may have been enhanced by pregnancy) pain and cough resulted earlier in life. The rate of growth and the tendency toward malignant degeneration can not be predicted[13], and, accordingly, surgical inter-

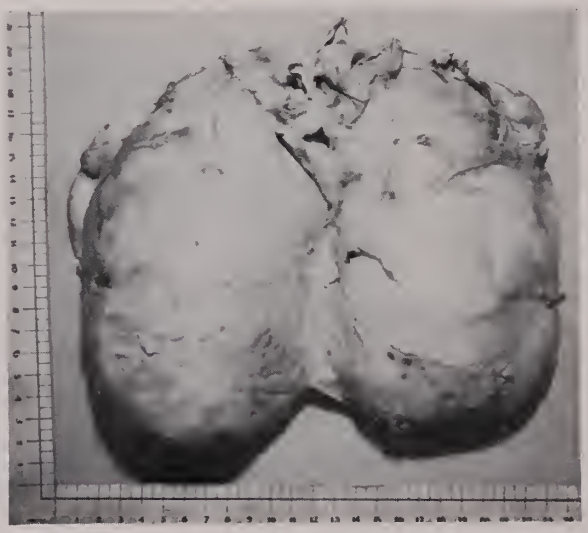

Fig. 5. Case 3. Gross specimen of neurofibroma removed from posterior mediastinum.

vention is advocated at the earliest feasible opportunity. Mediastinal tumors are interesting from the standpoint of diagnosis and treatment, and it is very gratifying to be able to accomplish good results in certain instances by surgical removal.

SUMMARY

In this paper a brief review of the general subject of neurofibromas has been presented, particularly with reference to isolated tumors. The indications for surgical intervention have been pointed out. One case of von Recklinghausen's disease and two cases of isolated neurofibromas involving the posterior mediastinum and the retroperitoneal space have been reported. Mediastinal tumors should be removed when possible because of the likelihood of continued growth and the danger of malignant degeneration.

Case 3 was presented through the courtesy of Dr. K. K. van Slyke.

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DISCUSSION

DR. FRANK PHILIP COLEMAN, Richmond: Although tumors of the peripheral nervous system have attracted a great deal of attention for centuries, the entire scope of multiple neurofibromatosis or von Recklinghausen's disease has not yet been clearly defined. It is well known that solitary tumors arising from either the cerebrospinal nerves or from the sympathetic nervous system may reveal an entirely different pathologic anatomy in various sections of the same tumor. This makes for difficult classification. A tumor may, on microscopic examination, reveal numerous ganglion cells at the time of its removal, while years later a recurrence or the appearance of the pathologic lesion in some other peripheral nerve may bear little resemblance to the original growth. Further study is necessary to elucidate the relation of these varied pathologic processes.

Dr. Williams has called your attention to two pathologic types of neurogenic tumors and has well illustrated the clinical behavior of this disease. I wish to cite briefly two cases with intrathoracic ganglioneuromas which I believe will emphasize certain points brought out by Dr. Williams.

V. M. was 11 years old at the time she was placed in a body cast for the correction of scoliosis in the cervicodorsal region. A follow-up x-ray disclosed a tumor in the right chest. Scoliosis may result from pressure of an associated neurogenic tumor or there may be bone involvement. Seven per cent of patients with von Recklinghausen's disease show skeleton deformity. This was a well circumscribed tumor lying in the dome of the right thoracic cavity and situated posteriorly in the costovertebral gutter. The posterior location and the discreteness of the tumor suggested a growth of neurogenic origin. Approximately 70 per cent of tumors arising from the sympathetic trunk are ganglioneuromas which are usually of a benign character. This patient also had two nodules on the right forearm and spots of brownish pigmentation over the body. In January, 1939, the intrathoracic tumor was removed and proved to be a non-malignant ganglioneuroma. A peripheral nerve tumor was excised and examination revealed a neurofibroma. This illustrates a case of von Recklinghausen's disease with two types of tumors which differed considerably in microscopic structure. She was asymptomatic for a period of six years, exhibiting no evidence of further peripheral nerve involvement and no recurrence of the intrathoracic tumor. Pregnancy during the latter part of 1945 was accompanied by the development of numerous subcutaneous nodules which rapidly increased in size and number during the period of gestation. After the spontaneous delivery of a normal infant in May, 1946, she began to suffer from difficulty in breathing and swelling of the face. A roentgenogram of the chest disclosed a recurrence of the intrathoracic tumor. Seven months later the superior vena cava showed marked obstruction, and the supraclavicular fossae were obliterated by multiple tumor masses leading to the appearance of a "bull neck".

She was two months pregnant at this time. This illustrates acceleration of growth of neurogenic tumors by pregnancy. Re-operation disclosed multiple tumors in the right thoracic cavity involving the cranial nerves as well as the peripheral nerves. The pathologic examination showed neurofibromatosis and no ganglion cells were present in any of the tumors. The familial occurrence of the disease is illustrated by the existing evidence of neurofibromatosis in her child. This female, age 3, raises the serious question of sterilization of females with such tumors in order to obviate the accelerating effects of pregnancy.

Case 2 was a female, 18 years of age, with an intrathoracic tumor manifesting bizarre neurologic sensory disturbances in the lower extremities. The tumor was an hourglass ganglioneuroma requiring a laminectomy and a transthoracic approach for its removal in February, 1940. Detail roentgenograms showed widening of the intervertebral foramen which may be observed in this type of tumor. She has remained well for a period of nine years.

I should like to agree wholeheartedly with Dr. Williams in his recommendation for removal of all solitary intrathoracic tumors. The potentiality of malignancy and the inevitable effects of pressure by these tumors necessitate their excision.

DR. HUGH H. TROUT, SR., Roanoke: First of all I want to congratulate Dr. Williams on the fine manner in which he presented his paper and under the handicaps which were unavoidably imposed on him—such as noise in the hall, the room not darkened, the projection machine not properly connected, etc.

Dr. Williams is also to be congratulated for his calling our attention to the difference of two distinct and separate diseases with each having a common origin. I am glad he referred to the contribution of Dr. Purdy Stout, who helped to clarify some of the confusion of terms by proposing the names of neurilemoma and neurofibroma. Dr. Williams is further to be congratulated on stressing the fact that surgical intervention in von Recklinghausen's disease is seldom justified except where the growth impairs the functions of a neighboring organ. I wish I had followed this word of caution in a case on whom I operated many years ago when I made an attempt to improve the facial appearance of such a case with a "lopsided" scalp. The result was neither pleasing to the patient nor to me.

I am glad Dr. Williams also called our attention to the employment of x-ray in making the differential diagnosis of mediastinal tumors.

Both Dr. Williams and Dr. van Slyke are to be congratulated on the successful outcome of their two cases. This type of surgery is a great comfort to those of us who are not as young as we used to be, for such work demonstrates the future of surgery will continue to make progress and is in safe hands.

Doctors Live to an Average 67.2 Years in 1949.

The Journal of the American Medical Association stated in January that it published the obituaries of 3,331 physicians during 1949, an increase of 101 over the number published in 1948.

This does not represent the total number of deaths among physicians in 1949, but only the total number of obituaries published.

Heart disease was the leading cause of death, with a total of 1,375 deaths, or 41 per cent. The average age at death from diseases of the heart was 66.8 years, slightly lower than the average age of 67.5 years in 1948.

Accidents caused 138 deaths among physicians—sixty deaths due to motor vehicle accidents, 10 to airplane accidents, 28 to falls, 4 to poisoning by liquids or solids, 7 to drowning and 3 to firearms.

VIRGINIA ACADEMY OF GENERAL PRACTICE*

JAMES L. HAMNER, M.D.,
Mannboro, Virginia.

The American Academy of General Practice was founded in 1947 as a result of a movement among general practitioners from several states, who were convinced that advancement in the general practice of medicine and surgery was essential to the welfare of the people, and to the medical profession. One of the chief objects of the Academy is the post-graduate education of the general practitioner. Membership in the organization should assure the public that the physician who belongs is one who is constantly striving to keep up with the advances in medical science, in order that he may be able to give his patients the best medical care. The Academy is so determined that its members shall continue their post-graduate education that it requires a member to spend at least 50 hours in post-graduate training in order to continue his membership after the three year period for which he was elected. The Academy does not stop by requiring its members to continue their training but it provides opportunities for so doing. This is evidenced by the fact that due largely to its efforts there are now residencies in general practice in many of the hospitals of the country. The Medical Departments of the United States Army, Navy and Air Force have provided such training for their medical officers. Preceptor training is being urged. Yale has already begun a program of preceptor training, under practitioners, for senior medical students. Michigan has had such a plan for several years. Departments of General Practice in Medical Schools are being considered.

The first Scientific Assembly of the Academy was held in Cincinnati last March. This was a grand success with 2,538 family doctors standing four deep a lot of the time to hear the scientific papers of twenty of the finest medical minds in American Medicine. Plans for the next Scientific Assembly to be held in St. Louis next February are now under way.

The Academy is not a political pressure group but wishes the American Medical Association and the State Societies to set policies and desires to work in close cooperation with them. It has made a great effort to advance prepayment medical care and hospital plans. It is proud of the share it had in the outstanding fight against Mr. Ewing's most recent efforts to regiment American Medicine. The Academy's Journal will be published soon.

The State Academies have been active too. Many are having their own meetings and are arranging for post-graduate training for their members. You are naturally interested in Virginia. Some of us are naturally disappointed that we have not grown more or been more outstanding in our efforts. There have, however, been some accomplishments worthy of note. We have added to our ranks many of Virginia's finest family doctors and our membership has about doubled during the past year. The Academy has been incorporated, our financial status is better and our working organization has greatly improved. There have been two meetings of the directors during the year and some effort has been made toward organizing sub-sections of the Academy. Your Academy has gone on record and worked against compulsory Health Insurance in cooperation with the Public Relations Committee of the Medical Society of Virginia. We have supported the drive to enroll patients in the Blue Cross and other voluntary prepayment plans. We have endorsed and are sponsoring an education continuation program to get cancer information to all doctors in the state. We plan similar effort in cooperation with Dr. Wagner of the State Health Department in working out plans for better cooperation between the family doctor and his department, in the care and handling of tuberculosis patients, particularly the chronic tubercular who is sent home and needs further care. We have worked with the Continuation Education Committee of the University of Virginia and the Medical College of Virginia. It is our hope to make post-graduate training more easily available to all practitioners. We hope to establish a bureau of speakers who would be available for call anywhere. We are also interested in organizing a Woman's Auxiliary to our organization. We hope we have and will continue to justify our existence.

*Address of the President before the Annual Luncheon of the Virginia Academy of General Practice at Old Point Comfort, October 10, 1949.

The Academy stands as the representative of the general practitioner. Its function is to speak for his branch of the profession. Its goal is to assure that adequate medical care of high quality be made available to all the people. The Academy will continue to work for conditions and opportunities for the general doctor which he cannot attain individually. We urge our members to work to improve themselves and to make our organization more valuable. We invite all family doctors to work toward membership in the organization. We beseech the support of all groups of the medical fraternity. There is no place in our profession for antagonism or strife. All groups must work together for the welfare of suffering humanity everywhere if we are to keep the medical profession strong and free.

Bibliotheca Obstetrica

PRESCOTT, OLIVER (1762-1827). A dissertation on the natural history and medicinal effects of secale cornutum or ergot. 1 plate. (Boston 1913.)

——: Idem. Boston: Published by Cummins and Hilliard. No. 1, Cornhill, Andover; printed by Flagg & Gould. 1813. This edition has a title page. On p. 1 there is no notation that it was read before the annual meeting, June 2, 1813. Its pagination is incorrect in that there are no pp. 2 and 3, otherwise the brochures are identical.

This was the annual discourse of the Massachusetts Medical Society. According to Thacher it was reprinted in Philadelphia and London and was translated into German and French. The part that pertained to treatment was copied by the French Dictionaire des Sciences Medicales (Vol. 13). Villeneuve (Memoire historique sur l'emploi du sergle ergote) in his excellent bibliography states that Camerarius (1688) was the first to call attention to the obstetrical use of ergot. The midwives in many places in Germany used it in slow labors. The next to mention this was Parmentier (1774) who mentioned it casually in a letter to the Abbot Rozier. Tessier (1783) was the first to call attention to abortions which followed eating bread made of spoiled rye. Valmont de Bomare (1800) again called attention to Parmentier's letter to the Abbot Rozier. John Stearnes (1808) was the first to discuss scientifically the use of ergot in obstetrics. Villeneuve does not mention Prescott's original edition of 1813 but only the London reprint of 1815 and the French translations. He attributes the knowledge of the drug in France to Charbonnier's translation.

Prescott disagreed with Stearnes in that in six cases the uterus did not respond to the drug. He advises that in cases of irregular action of the uterus or rigidity of the uterine muscle fibres, these obstacles should be removed by copious (20 oz.) venesection before using the remedy. He calls attention to an article in the *New England Journal of Medicine and Surgery* in which an author suggested that the death of the infant is more frequent when ergot is used. He does not think that this is so, although he admits the loss of four children in 22 cases of primiparous labor and one in 35 multiparous labors. These, however, were all difficult cases. In this connection, Fordyce Barker says that he had it on good authority that Dr. Stearnes lost so many infants charged to the use of this article, that he left Albany and removed to New York.

Prescott was born in Groton, Massachusetts, April 4, 1762. His father, also named Oliver, was a well known doctor and military man. He graduated A.M. from Harvard and studied physic under his father and Dr. James Lloyd of Boston. He passed the Board of Censors of the Massachusetts Medical Society in 1786. Thacher says that it was customary, before and after the Revolution, for professional men to serve in all sorts of public capacities. Prescott was a surgeon in Gen. Lincoln's Army that suppressed Shay's rebellion. He also served as town clerk and in various county and state offices. He was interested in horticulture. In addition he had a busy practice and was especially interested in obstetrics.

A REVIEW OF COLON CANCER—

Presentation of Fourteen Cases Concerning Cancer of the Colon

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Perhaps a few general considerations concerning the incidence, diagnosis and treatment of cancer of the colon will be appropriate before reviewing the cases operated upon in conjunction with Dr. Lomax Gwathmey in the past three years.

In the incidence of carcinoma of the gastro-intestinal tract, cancer of the colon ranks second to that of the stomach. An early, accurate diagnosis is of utmost importance if the patient is to receive any help and probable cure.

Whenever a patient reveals symptoms of changes in bowel habits, a careful investigation should be performed. These symptoms may include some or all of the following:

Increasing constipation, attacks of diarrhea, abdominal discomfort, alternating diarrhea and constipation, mucus, tenesmus, blood in stools, tarry stools, alteration in the caliber of the stools—as, ribbon or pencil stools; the bleeding may be an inconstant symptom. Patients with lesions of the right half of the colon show more symptoms of weakness, pallor, anemia and more debilitation but markedly less symptoms of obstruction.

After a careful history and preliminary examination, it has been our policy to have the patient report to the office after a cleansing enema at home, and a digital examination is made. With the patient on his left side and knees well flexed on the abdomen, have the patient strain down gently and a recto-sigmoid mass will usually be palpable by the examining finger. The proctoscopic and sigmoidoscopic examinations are then performed with the patient in knee chest position, and biopsies taken. These examinations are then followed by the contrast colon X-ray studies. Taken together, these various examinations should give the complete picture. If the above studies fail to reveal a cancer, the patient should be observed for a period of time and if the characteristic signs and symptoms persist, then the entire study is repeated until one is quite certain that negative findings are accurate.

Approximately three-fourths of the colon lesions are located in the sigmoid, recto-sigmoid and rectum. The remaining quarter are fairly well distributed in the other anatomic locations in the colon. It must be remembered that cancer of the colon may be multiple and may be densely adherent to the bladder and female pelvic organs or the prostate in the male. Backaches should be studied for possible metastasis to bone.

The high incidence of polyposis in the colon, particularly the terminal part, parallels the incidence of malignancy of this area, and, since it is claimed that approximately fifty per cent of colon polyps become malignant, it is well to be on the alert for the differentiation and possible change. The treatment of polyps depends, of course, upon the location and spread.

When a positive diagnosis of cancer is made, the location of the lesion will usually to a great extent determine the procedure to be followed.

Our usual pre-operative plan consists of hospitalizing the patient for approximately seven to ten days prior to surgery, on the following routine:

a. Strict non-residue diet.
b. Chemo-therapy—sulfasuxidine or sulfathalidine—streptomycin.
c. Daily colonic irrigations.
d. Vitamins—especially C.
e. General support with intravenous fluids, blood and proteins.
f. Mental reassurance and gaining of confidence is definitely helpful. It is also necessary to discuss the possibility of a permanent colostomy, so that there may not be too much mental shock after surgery.
g. In some incidences, previous vein ligations of femoral may be a life saving measure, if indicated.
h. An X-ray skeletal investigation is important to determine possible metastasis.

The surgical procedures performed will be demonstrated in the discussion of the following cases:

Case No. A34,323. Mr. E. R. W., white, male, 52 years of age, had experienced vague abdominal

discomfort periodically, approximately eighteen months before seeking medical advice. He had intervals of diarrhea but no bloody or tarry stools. Three or four weeks prior to investigation he began with rather severe, colicky pains in his abdomen. His family physician diagnosed an obstructing lesion of his descending colon by X-ray and referred the patient to us for surgery. On exploration, a grade II adeno-carcinoma of the descending colon was found and resected. Because of the marked distention and inability to properly prepare the patient, both loops of the colon were exteriorized and a cecostomy was performed at the same sitting. His post-operative course was uneventful and he was able to return in approximately one month at which time an end to end anastomosis was performed. This patient was well and doing nicely approximately one year after his surgery.

Case No. A34,529. Mr. C. A. T., white, male. 57 years of age, was brought to the hospital as an acute intestinal obstruction of three to four days duration, and referred to us as an emergency. He had abdominal cramps and constipation ten days previously, and three or four days prior to admission he became acutely ill with nausea, vomiting and abdominal distention. Surgical exploration demonstrated a complete obstruction by recto-sigmoid lesion. A cecostomy was performed and our usual procedure instituted. In fourteen days, the patient was returned to the operating room and the lesion was resected and an open end to end anastmosis was performed. His convalescence was uneventful and a complete recovery was made.

Case No. A45,875. Mr. R. L. E., white, male, 39 years of age, was apparently in good health except for the fact that he was overweight. While under care for weight reduction he experienced one attack of supra-pubic pain which was followed by some dark blood in his stool. He reported to his physician, who localized a carcinoma of the descending colon, and referred the patient to us for surgery. A two stage Mikulicz was performed. His convalescence was very satisfactory and his function has been normal for the past two years.

Case No. A37,882. Mrs. E. S. J., white, female, 40 years of age, had a history of illness extending over a two year period. Her complaints were nausea, vomiting and diarrhea. She was treated symptomatically for colitis. About eight days prior to admission she developed a marked constipation and was referred to us for intestinal obstruction. The immediate obstruction was relieved and study showed an obstructing lesion of the upper portion of the sigmoid. The carcinoma was resected in *toto* and an open anastomosis was performed. There was no evidence of metastasis at the time of operation and the patient made a very satisfactory and uneventful recovery.

Case No. A7403. Mrs. M. C. J., white, female, 78 years of age, upon whom we performed a strangulated hernia operation in 1942, returned with obstructive symptoms in 1946. An almost completely obstructing lesion of the transverse colon was found. After a preliminary cecostomy, a resection and an open end to end anastmosis was performed. Regardless of the patient's age and debilitating condition, an uneventful recovery was made.

Case No. A43,829. Mrs. A. C. O., white, female, 63 years of age, began complaining of pains in rectum seven months prior to seeing her physician. Pains increased in severity and she then noticed some bleeding with her bowel movements. A large, malignant lesion was found approximately one inch above the anus, causing almost a complete obstruction. A large fibroid tumor was present and a hysterectomy was necessary to perform the one stage abdomino-perineal resection. This patient made a complete and uneventful recovery.

Case No. A46,757. Mr. B. R. P., white, male, 41 years of age, who was under medical care for proven amebic dysentery for approximately one year, was shown to have a malignant lesion of the descending colon by routine barium enema study. A one stage abdomino-perineal resection was performed and the patient convalesced very nicely until approximately two weeks ago; i. e., fifteen months following surgery, when abdominal pains returned and a liver mass was evident. The patient is under X-ray therapy.

Case No. A50,778. Mrs. E. M., white, female, 60 years of age, consulted her family physician because of loss of weight and general malaise. No history of alteration of bowel movements and no bleeding. Routine examination showed a malignant lesion of the transverse colon—hepatic flexure. The tumor was resected and an ileo-transverse colon anastmosis was performed. She made a very satisfactory recovery.

Case No. A17,576. Mrs. I. C., white, female, 23 years of age, began her illness approximately one month prior to surgery. At onset, because of fever and a tender mass in the left, lower quadrant, her illness was diagnosed as an acute diverticulitis of the sigmoid. After the acute condition subsided, an adeno-carcinoma of the descending colon was recognized by X-ray. A one stage resection and open anastmosis was performed and the patient's recovery was prompt and very satisfactory.

Case No. A49,663. Mrs. W. E. D., white, female, 74 years of age, experienced abdominal pains approximately four months prior to surgery. Pains were aggravated by bowel movements, but no history of diarrhea, constipation or tarry stools. An almost complete obstruction of the descending colon by an advanced malignancy was found. Metastasis was evident; however, a resection and anastomosis was performed with the hope of making her last days comfortable. The patient made a very satisfactory recovery and some months after leaving the hospital she was still comfortable. She has not been heard from in the past four months.

Case No. A52,797. Mrs. M. D. A., white, female, 64 years of age, began her illness suddenly with acute intestinal obstruction. Her condition was such that an immediate exploration was necessary. An obstructing lesion in the lower sigmoid was found and a cecostomy was performed. After twelve days of preparation, a one stage abdomino-perineal resection was performed. She made a very satisfactory recovery and is at the present going about her usual duties with good function.

Case No. A87,83. Mr. B. T. B., white, male, 59 years of age, began his onset of illness four days prior to admission, with nausea, constipation and distention. His obstruction upon admission demanded immediate exploration, and a large, malignant lesion of the splenic flexure of the descending colon was found. A cecostomy was done. After fourteen days of preparation, a one stage resection and anastmosis was performed. A somewhat slow but satisfactory recovery was made. This patient was seen recently and he is comfortable, performing his regular duties and has normal function.

Case No. A44,240. Mr. I. F., white, male, 67 years of age, sought his family physician because of abdominal pain and severe constipation of several months duration. An X-ray diagnosis of malignancy of the descending colon was made but the patient refused surgery. Approximately seven months later, the patient was so miserable that he requested surgery. A one stage resection and open anastomosis was performed. This patient was markedly debilitated—he had generalized arteriosclerosis with arteriosclerotic heart disease and cardiac insufficiency. He developed a severe bronchopneumonia following his operation and his convalescence was markedly slow and erratic. However, this man is at present attending to minor duties and is practically symptom free.

Case No. 7661 and 9619. Mrs. M. S., white, female, 81 years of age, was referred to us by her family physician with an X-ray diagnosis of cancer of the descending colon. Her original symptoms were constipation and blood in her stools. A two stage Mikulicz type of resection was performed on the patient with an uneventful convalescence. Approximately one year after her second stage was performed, her family physician reported that she was doing very nicely.

The pathological studies in the above cases ranged from Grade I to Grade III. It is interesting to note that, on several occasions, foreign bodies—as a piece of bone—were found in the crater of the malignant ulcer.

At the time of operation a routine abdominal exploration was always performed to determine possible metastasis.

Usually our choice of anesthetic was spinal supplemented by sodium pentothal or nitrous oxide when necessary; however, it is felt that the anesthetic should be made to fit the individual case.

The post-operative care consisted mainly of general supportive measures, transfusions, glucose, proteins, vitamins, streptomycin and early ambulation.

The importance of studying and re-examining a patient with altered bowel habits until one is sure a malignancy does not exist can not be over-stressed.

The surgical procedure, of course, must be "tailor-made" for the case.

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DIABETES INSIPIDUS WITH SENSITIVITY TO POSTERIOR PITUITARY HORMONE—CASE REPORT

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Roanoke, Virginia.

In recent years there has been an increasing use of biological products in the various fields of medicine. Because of this we must be on the watch for unfavorable side-reactions or complications from the use of such products; and we must also distinguish between side-reactions due to the physiological or toxic action of these preparations and true hypersensitivity to them. Such sensitivity is not common, especially to posterior pituitary extract with which this paper is concerned.

This hormone, as we know, is used chiefly in obstetrics. Pendleton, in reviewing 15,000 obstetrical cases, found only two allergic reactions to pituitrin.

The earliest report of such sensitivity was by Hasson in 1930, who reported two cases, both in non-obstetrical patients—in one the reaction occurred after six injections given over a period of three weeks; in the second case the reaction followed a second injection given after an interval of eight months. M. Harten and Walzer in 1940 reviewed the literature and reported twenty-two such cases. Included in this were five cases of F. A. Simon and C. F. Ryder who studied in great detail these cases. All five of these were in women who apparently had previously had posterior pituitary following delivery. Simon also had one case in a man with diabetes insipidus which he had not reported, and for which he found no solution (personal communication). Of these twenty-two cases up to 1940, all but one were females. Most of them were between the ages of twenty and forty. Three had previous personal history of atopic illness and one had past family history of allergy. In 1944, E. Schleger in the *British Medical Journal* reported one case of anaphylactic shock after posterior pituitary extract injection for menorrhagia. This was followed in one week by a slight irritant rash at the site of injection.

In practically all of these cases then, the patients had previously received injections of posterior pituitary extract. The symptom most frequently encountered was urticaria; other symptoms were angioedema, bronchial asthma, abdominal cramps, nausea and vomiting and collapse. Occasionally there was severe pruritus with urticaria. In none of these cases were there any fatalities. Because of the common use of this preparation, it would seem that sensitization to it is quite difficult. And since most of these cases are in obstetrical patients, it is not of great moment, because substitutes can readily be found. However, in the case I will present, the solution is quite important, for it concerns a case of diabetes insipidus in a man, and his only relief is in the use of posterior pituitary.

CASE REPORT

Patient: White male, physician, age 39, who had a proven case of diabetes insipidus, which he attempted to treat with posterior pituitary extract. At first he used the tannate in oil. Following an injection of this, he developed a generalized systemic reaction with asthma, which was relieved by adrenalin. Feeling that this reaction was due to the oil, he tried an aqueous extract and again had a similar reaction. In an attempt to develop a spontaneous remission of his sensitivity, he waited several months before repeating the pituitary. At that time he tried using the powder by nasal insufflation. This attempt was followed in fifteen minutes time by a severe generalized reaction consisting of hives, urticaria, asthma and finally laryngeal stridor. Fortunately, he was able to summon a physician who gave him adrenalin with complete relief of his troubles. One and one-half years later we saw the patient for the first time and felt that there were three possibilities of sensitivity present: (1) Sensitivity to the pituitary hormone itself; (2) Sensitivity to the animal protein; (3) Sensitivity to the organ. In order to determine the exact nature of the response, we contacted the manufacturers of the particular brand which he was using and were told that their extract was made from beef gland. In addition, they supplied us with extracts of beef muscle, and posterior pituitary for testing purposes. These were all lyophilized aqueous extracts extracted in the cold. To the muscle he gave no reaction. To the

pituitary extract, in less than five minutes, he reacted severely with an area of erythema 6 cms. in diameter, whealing 3 cms. in diameter and pseudopodia from 0.3 cm. to 2 cms. in length. At the end of five minutes time he began to complain of a tightening in his chest and difficulty in breathing. These reactions were controlled in about fifteen minutes by the use of adrenalin at the site of the test and in the opposite arm, and the application of a tourniquet proximal to the test site. Prior to performing the tests, blood had been withdrawn from the patient, and passive transfer tests were performed on a non-allergic subject. The results of these tests were all similar to those performed directly on the patient. Inasmuch as he was negative to the beef muscle and positive to the posterior pituitary, we felt certain that this was a case of sensitivity to some factor in that portion of the gland. With the cooperation of the manufacturer we were supplied with an extract in which the active substance had been destroyed. Both direct and passive transfer tests with this material were negative. This would seem to indicate definitely that the sensitivity was to the active principle of the posterior pituitary substance.

The problem now resolved itself into what to do for him. Various opinions had been obtained, and the consensus was that nothing could be done, or that nothing need be done inasmuch as there is a spontaneous loss of sensitivity in these cases. In spite of the fact that he had gone one and one-half years, we set a further arbitrary period of one year, which we felt was long enough. During this time, he took no treatment, and continued to suffer the discomforts of too little fluid intake, or the inconveniences of large fluid intake, which are the penalities of diabetes insipidus. Again skin tests, direct and passive transfer, were performed as above with the same results. We concluded that we had here a true hypersensitivity to posterior pituitary gland extract which would not subside spontaneously. Accordingly we attempted "desensitization". The initial dose was 0.05 c.c. of a 1-10,000 solution (0.0000005 gm. of posterior pituitary powder). By gradual increases we reached a maximum dosage of 0.18 of 1-10 solution (0.0018 gms. of powder). At this stage he attempted intranasal medication again and is now able to tolerate approximately 1 mg. of powder in this fashion. This dosage, twice a day, allows him to go for four to five hours without symptoms, which is a satisfactory result.

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906 Medical Arts Building.

Use Carbon Dioxide-Oxygen Mixture to Prevent Migraine Headache.

Migraine attacks may be interrupted before headache develops if the patient inhales a mixture of carbon dioxide and oxygen, according to a study made by Drs. Robert M. Marcussen and Harold G. Wolff on a total of 25 trials carried out on 15 patients. (January issue of *Archives of Neurology and Psychiatry.*)

"Carbon dioxide in 10 per cent concentration was administered by face mask to recumbent patients for three periods of five minutes each."

"When the carbon dioxide-air combination was followed by the carbon dioxide-oxygen mixture in similar amounts or when the carbon dioxide-oxygen mixture was used alone, vision cleared completely and remained so. The expected headache did not follow.

"One subject experienced extreme sleepiness and nausea as preheadache manifestations. During inhalation of the carbon dioxide mixture the patient became alert; her nausea disappeared in less than the usual interval, and the expected headache did not follow.

"When headache was present, the results were unpredictable. Although these experiments have not shown that the use of carbon dioxide-oxygen mixtures is entirely predictable, they indicate that the migraine attack can be interrupted before the headache develops."

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia
and the
University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: B-52010

This 46 year old colored female was admitted to St. Philip Hospital in coma. The history obtained from the patient's husband indicated that the patient had been very "nervous" for about four months. The "nervousness", apparently precipitated by worry over a daughter's illegitimate pregnancy, was manifested mainly by insomnia and frequent crying. For these complaints her local physician had given her "many nerve pills". In the 10 days prior to admission the patient had complained of increasing weakness, anorexia and frontal headaches. Four days before admission the weakness had become very marked and the patient had difficulty in picking up objects and two days later there was a marked tremor of her hands. Seen at this time by her local physician she was given a hypodermic, following which she went into a "deep sleep with heavy breathing". The same evening while still asleep she was given three rectal suppositories at four hour intervals, her husband apparently having confused the doctor's orders. The patient was then brought to the hospital having been "asleep" for approximately 36 hours. She had not voided during the two days prior to admission.

The patient had had some dyspnea and ankle edema for about 3 months and nocturia 3-4 times for some time. A physician told the husband that the patient had had high blood pressure and heart trouble. The past history was otherwise non-contributory.

Physical examination: Temperature 100.8°, pulse 96, respiration 16, blood pressure 130/40. The patient was obese, comatose and responded only slightly to painful stimuli. The skin was warm and dry. There was marked fetor oris and one examiner detected a "uremic odor". There was marked conjunctival edema. The pupils were constricted and did not react to light. The neck was supple. There was no venous distention. Respiration was stertorous and of the Cheyne-Stokes type, approximately 16 per minute. The lungs were clear. The cardiac P.M.I. was in the mid-clavicular line and was very forceful. The rhythm was regular. A harsh systolic murmur was audible in all valve areas. The aortic second sound was very weak. There was a large, firm, irregular mass filling the lower abdomen and extending to the umbilicus. The liver was palpable two finger breadths below the costal margin. All peripheral pulses were palpable and of a "water hammer" type. The hands were swollen and there was 2 plus edema of the ankles. On pelvic examination the abdominal mass was thought to arise from the uterus. No other pelvic abnormalities were noted and the rectal examination was negative. Tendon reflexes in the upper extremities were hyperactive and equal. There was a positive Hoffman sign bilaterally. Knee and ankle jerks were absent; the Babinski was positive bilaterally.

Laboratory data: No urine was obtained. Hemoglobin 3 grams, r.b.c. 1,440,000 w.b.c. 14,100, 72 polys, 1 eosinophil, 1 basophil, 14 lymphs, 2 monos, and 5 myelocytes. Blood sugar was 132 mgm.%, NPN 122 mgm.%, CO_2 combining power 25 vol.% or 12 mEq/liter. Serum chlorides under oil were 107 mEq/liter, calcium 5.8, phosphorus 13.2. Flocculation negative. Two days after admission the NPN was 156 and the creatine 19.2.

The patient was cystoscoped and no obstruction noted in the urinary tract. No urine was obtained from either kidney. Retrograde urogram of the left tract was essentially negative. A flat plate of the abdomen showed calcification throughout the abdominal mass.

The patient was given fluids by veins and hypoclysis, totaling 3,000 cc. daily, half 5% dextrose in distilled water and half dextrose in saline, intravenous calcium gluconate and several doses of caffeine sodium benzoate. There was no improvement and the patient remained anuric. On the third hospital day the patient's temperature spiked to 105° and she expired. An autopsy was obtained.

Discussion by Dr. Arthur Gathright.*

In considering the rather scanty facts given in the history and physical examination, they fall into several groups:

1. Those referable to the nervous system. Beginning with simple nervousness and crying, with progress over a four months period to weakness, headache, tremor, drowsiness, Cheyne-Stokes respiration, coma, and with reflex changes which indicate a generalized rather than a localized disturbance of the central nervous system.
2. Those referable to circulatory system. History of high blood pressure and heart trouble in the past, presumably antedating the duration of this illness which goes back four months; definite dyspnea and ankle edema of two months duration. On examination: blood pressure 134/40, "water hammer pulse" and systolic murmur at all valve areas; probable cardiac enlargement; forceful apical impulse; weak aortic second sound; two plus ankle edema with edema of hands and eyelids; skin warm and dry. No neck vein distention.
3. Those referable to urinary tract. History of nocturia three to four times antedating present episode.

Edema which could be related to kidney rather than heart or a combination of both.

Other findings of interest are: Marked anemia without too much alteration in the white count or differential and disturbed blood chemistries. Large abdominal mass thought to be attached to uterus or arising from it.

In considering a patient in coma, there are many conditions which have to be brought into the picture. Prominent here would be (1) hypertensive encephalopathy; (2) cerebral hemorrhage or thrombosis (not likely because of rate of onset and neurological); (3) diabetic acidosis—definitely to be thought of and hard to rule out with no urine and low CO_2 (but I have never seen one with an essentially normal blood sugar); uremia which is suspected from the examination (uremic breath) confirmed by the NPN of 122 on admission.

The onset of illness with "nervousness", which could mean anything, progressing to weakness, anorexia with severe frontal headaches, drowsiness, Cheyne-Stokes breathing, variable reflexes is quite typical of the uremic state plus the disturbances in blood chemistry (elevation of NPN), low calcium (5.8), high phosphorus (13.2) without tetany, and low CO_2 combining power can all be explained on the basis of uremia. Uremia is the only condition I know of where the calcium is excessively low and phosphorus quite high. The absence of tetany is usually explained on the basis of calcium reduction being due to reduction in protein bound calcium, a part of the hypoproteinemia of terminal renal disease rather than a marked reduction in the ionized calcium. The nearest approach to these findings as to calcium and phosphorus would be in a deficiency of parathyroid hormone, but the protocol does not direct our attention toward any of the causes of this condition.

This patient was said to have passed no urine for two days before admission nor was any urine obtained during the three days she lived in the hospital. It might be well to ask what caused the anuria. In reviewing the causes of anuria, we might think of those that are obstructive in type and those that are not. The obstructive type are ruled out by the cystoscopic examination that was done. Except for the fact that this was done, we should have had to consider especially an obstruction to ureters by the large abdominal mass which I assume is a large fibroid in an older woman. These not infrequently contain calcification and especially when there is chronic renal disease in the same patient.

I do not think that this tumor is related to the renal problem except that it may play a part in the production of the severe anemia found in the case which would affect the kidney directly and indirectly.

Of the non-obstructive causes of uremia, we have to consider the possibility of—

Chronic Nephritis

Tuberculosis of both kidneys

Polycystic kidneys but no mass, not high enough NPN, too deep coma, and retrograde pyelogram negative

Suppurative pyelonephritis and acute ascending nephritis

Reflex after surgery or trauma—rapid emptying of chronically distended bladder

Poisoning—lead, phosphorus, turpentine

Severe collapse as from injury or severe febrile

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disease after heavy metals—mercury, gold, arsenic, salyrgan
Serum reactions
Transfusion reaction
Malignant malaria

Of the above possibilities, I believe that this is most likely to be the end stage of a long-standing chronic nephritis or the terminal event in the malignant phase of an essential hypertension of long-standing. A better history, examination of eye grounds, and a urinalysis would be helpful. The blood pressure here is peculiar in that the diastolic is low and systolic is normal, but we are told that she had had hypertension in the past. I therefore do not feel that this one reading is significant and that it should not mislead us. It is probably a reading which represents a relative shock associated with a failing myocardium.

We then come to a consideration of the profound anemia in this case and if in this rather general protocol there is a trick—and I strongly suspect that there is—this is probably the best clue. The simplest and a perfectly justifiable explanation of the marked anemia is on the basis of the renal disease. There is frequently a profound anemia noted, and I have seen many cases with 50-60% hemoglobin and some as low as 30%, but I don't believe I have ever seen it this low (3 grams or approximately 21%). The count itself shows little except a slight iron deficiency, anemia, the color index here being approximately 0.8. It does suggest that there may have been chronic hemorrhage either from excessive or abnormal uterine bleeding, an important consideration if we are going to assume that the pelvic mass is a fibroid or that we must look for some other chronic bleeding such as we get from the G. I. tract. There is no stool examination but rectal examination was negative. The only G. I. symptom mentioned was anorexia which goes with many conditions especially uremia. There is nothing to suggest ulcer and no mention of change in bowel habits. We probably should have to give some consideration to a lesion in the colon, especially ascending colon where not infrequently a lesion is discovered only after the patient has sought help because of the symptoms of anemia. In the past, there was cardiac enlargement with a forceful P. M. I. noted. This, I think, gives us a right to assume that the patient has had hypertension in the past and that the given reading represents a weakening of heart muscle with drop in pressure. We might account for this weakening of the heart muscle on the basis of the severe anemia or more likely, on the basis of a combination of myocardial disease plus anemia. I should like to think that this might represent a state of relative shock in this patient used to much higher tension. It would be another possible explanation of the renal shutdown and rising NPN, but the protocol does not paint the picture of profound shock or collapse. It may well be another of the straws that broke the camel's back, however. The heart murmurs are not described in much detail but may represent hemic murmurs on the basis of both the anemia and probable dilatation of chambers of the heart with relative valvular insufficiency. The peripheral "water hammer" pulse without any evidence of aortic regurgitation or arterio-venous aneurysm is confusing and even contradictory but does occur in severe hypochromic anemia. The palpable liver probably represents chronic passive congestion in the liver due to heart failure, though there is not a very clear cut picture of heart failure at the time of the admission examination.

There seems to be nothing unusual in the final episode—death. Many patients in uremia have terminal rise in temperature, perhaps with some hypostatic pneumonia and die.

Hospital diagnosis: (1) uremia. (2) chronic nephritis, type? (3) uterine fibroids, calcified.

Dr. Gathright's diagnosis: In summary then, I would say that on the basis of the information given that this patient represents the end-stage of a chronic renal disease, most probably chronic nephritis with a possibility that it could be the malignant phase of a benign hypertension, arteriosclerotic heart disease, cardiac enlargement, and probably some cardiac dilitation, hepatomegaly on the basis of chronic passive congestion, and calcified fibroids of the uterus.

Further remarks: I have been asked to comment on the management of the case during this patient's brief three day period, and I have not interpreted this to mean that the Committee wishes any statement regarding the treatment of uremia per se but for the immediate management of this critically ill patient. I have only one point which I would like to make and that is that I feel that no matter how hopeless or ill a patient may be that where he is found to have a hemoglobin at a critical level that he should

be given blood transfusions to see whether he can be improved or for support until a diagnosis can be made. I believe that this patient should have had blood. I doubt that it would have made a great deal of difference in the outcome. It is possible that the cardiac function might have been improved and possibly the renal function.

Pathological report: Dr. Thomas M. Scotti*.

The cause of death is chronic glomerulonephritis. It is possible, however, that the sedatives (probably barbiturates) given frequently to the patient may have been an added factor in the terminal episode since the liver which was cirrhotic might not have detoxified the drug adequately.

The kidneys were larger than normal. The left weighed 280 gms.; the right, 210 gms. The external surfaces were pale and finely granular. Histologically, practically all the glomeruli showed some de-

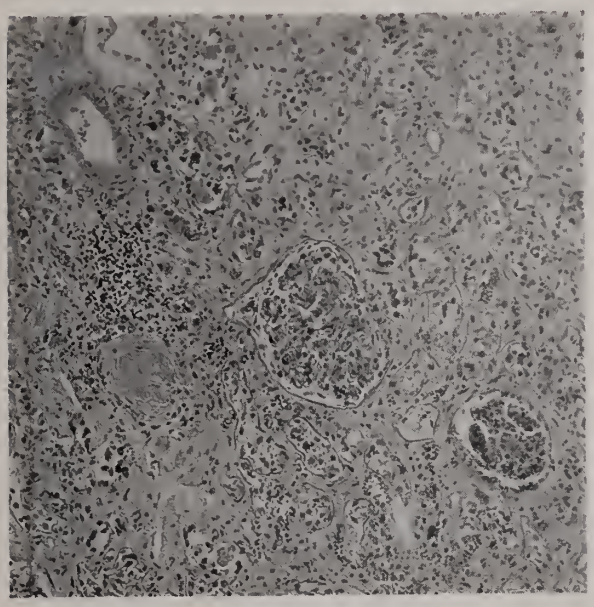

Fig. 1.—Kidney low power.

gree of change, most of them disclosed diffuse, interstitial fibrosis with partial or complete occlusion of the capillaries. Many tufts adhered to the capsule. Fibrotic crescents were sometimes seen and even active proliferation of capsular epithelial cells was occasionally noted forming small crescents. About 10 per cent of the glomeruli were completely fibrotic. There was diffuse interstitial fibrosis with slight lymphocytic infiltration. Moderate tubular atrophy and desquamation of tubular epithelium were observed. A few casts and red blood cells were noted in the lumina.

The renal changes are of the type described by Bell as chronic azotemic glomerulonephritis, histological type b, in which the kidneys are not neces-

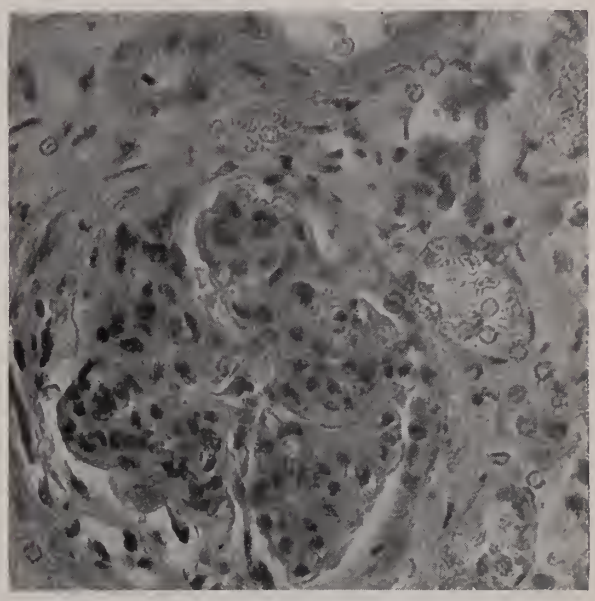

Fig. 2.—Kidney high power.

sarily small but often are normal in size or larger than normal. This is in contrast to the usually described picture (Bell's histologic type a) in which

Fig. 3.—Liver low power.

*Assistant Professor of Pathology, Medical College of Virginia, Richmond, Va.

the kidneys are markedly shrunken showing fibrosis of practically all glomeruli.

Pathological diagnoses:

1. Chronic glomerulonephritis.
2. Portal cirrhosis of the liver.
3. Cardiac hypertrophy, left ventricular.
4. Moderate atherosclerosis of aorta and calcific plaques of mitral valve.
5. Pulmonary congestion and edema, bilateral.
6. Multiple leiomyomata uteri.

New Books.

Recent acquisitions to the Library of the Medical College of Virginia available to our readers under usual library rules are:

Beder—Surgical and maxillofacial prosthesis.
Bernes—The eye and its diseases. 2d.
Biggart—Pathology of the nervous system.
Bogert—Nutrition and physical fitness.
Comroe, ed.—Ecology of health.
DeRiver—The sexual criminal.
Dunbar—Synopsis of psychosomatic diagnosis and treatment.
Farrington—Francis Bacon: Philosopher of industrial science.
Freeman—The energetics of human behavior.
Friedberg—Diseases of the heart.
Gordon—Medicine throughout antiquity.
Gorer—The American people.
Gutierrez-Mahoney—Neurosurgical nursing.
Hirsh—The problem drinker.
Hunt—Personality and the behavior disorders.
Kovacs—Manual of physical therapy, 4th ed.
Lemberg and Legge—Hematin compounds and bile pigments.
MacLeod—Evolution of kemotherapeutic agents.
Magnus—Goethe as a scientist.
May—Diseases of the eye. 20th ed.
Mead—Male and female.
Pick—Surgery of repair. 2 vols.
Prescott and Dunn—Industrial microbiology. 2d ed.
Recent progress in hormone therapy. Vol. 4, 1949.
Reyniers—Germ-free life studies.
Rhodes and VanRooyen—Textbook of virology.
Spaeth—Principles and practice of ophthalmic surgery.
Stekel—Compulsion and doubt. 2 vols.
Vitamins and hormones. Vol. 7, 1949.
Wiener—Surgery of the eye.
Zahorsky—From the hills. An autobiography of a pediatrician.

Doctors Report Successful Treatment for Mental Depression.

Drs. Theodore T. Stone and B. Cullen Burris of Northwestern University Medical School and Wesley Memorial Hospital, Jan. 21, J.A.M.A., report that shock treatment and psychotherapy for mental depression have resulted in complete recovery of 95 per cent of a group of patients, both electric shock and insulin shock treatments being used.

Sleeplessness, loss of appetite, loss of weight and nervousness are indicative of the condition, especially when these symptoms occur in a woman in her 40's or early 50's, according to the doctors. Each patient had daily sessions with the doctors in an attempt to determine causative factors or other problems requiring analysis and explanation. Fears and doubts were explained and peculiar and inaccurate thoughts were rationalized and cleared whenever possible.

Most of the 50 patients in the group were women, and all had been treated previously for sugar diabetes, high blood pressure, hardening of the arteries, fatigue, chronic gallbladder disease, stomach ulcers, anemia, undulant fever or other conditions. A number of the patients recovered completely after a month of shock treatment. In a few cases, two to four years were required for recovery.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for January 1950 as compared with the same month in 1949, is as follows:

	January 1950	January 1949
Typhoid and paratyphoid	6	2
Diarrhea and Dysentery	392	346
Measles	123	2,363
Scarlet fever	133	63
Diphtheria	23	13
Poliomyelitis	6	4
Meningitis	10	9
Brucellosis	2	4
Rocky Mountain spotted fever	0	0
Tularemia	9	3

DISEASES TRANSMISSIBLE FROM ANIMALS TO MAN

The U. S. Public Health Service lists some 85 diseases of animal-human relationship. The following table records the ones of most importance in Virginia at the present time.

Diphtheria, septic sore throat and scarlet fever are primarily human in origin. Certain animals, however, are susceptible and when infected can pass the infection back to man. Cows in particular should be kept from contact with human cases of these diseases. Pasteurization of milk is a primary control measure.

DISEASE	VA. CASES REPORTED 1949	COMMON ANIMAL HOST	USUAL METHOD OF TRANSMISSION	CONTROL MEASURES (Animal and Man)
Brucellosis	73	Cow, goat, hog	Contact Milk	Calf vaccination, control and elimination of infected animals. Care in handling animals and carcasses. Pasteurization of milk.
Rabies: Man Animal Dog Cattle Others	0 82 66 6 10	Dog	Bite	Vaccination of all dogs. Destruction of stray dogs. Active immunization of persons bitten.
Rocky Mountain spotted fever	101	Wild rodents and other animals Dog	Tick Bite Dermacentor andersoni (Northwest U. S.) Dermacentor variabilis (Eastern U. S.)	Personal care to avoid ticks. Vaccination.
Salmonellosis	28	Cow, hog, hen, sheep, rat	Infected meat Food contaminated by rats or flies	Protection of food. Thorough cooking.
Tularemia	40	Rabbits, birds, other animals	Skin abrasions	Care in dressing rabbits. Thorough cooking.
Tetanus	6	Horse and other animals	Wound infection with animal feces	Cleansing of wounds. Anti-toxin. Immunization.
Tuberculosis (bovine)	0	Cow	Infected milk or meat	Elimination of infected animals. Pasteurization of milk.

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Department of Mental Hygiene and Hospitals.

Care and Training of the Mental Defective (Feeble-Minded).

Frequently the question arises among physicians, and also laymen as to the capacity of mental defectives to take training, and what constitutes this care and training. Mental defective as used here comprises the three levels, high grade (moron), middle grade (imbecile) and low grade (idiot). Any program for mental defectives would embrace measures concerning the borderline level as well.

Society is beginning to realize its responsibility in regard to those of retarded mental development, and to give attention to salvaging human values heretofore permitted, in many instances, to become social liabilities. Every child should be trained to develop his fullest capabilities so that he may live a happy useful life. A program of care and training of the mental defective must be adapted to the levels of intelligence. Through appropriate training even those of the lower levels can be aided.

The low mental defective is unable to take any formal education, hence the only place for his care and training is the home or the institution. Many low defectives are unable to care for their own personal needs, hence their training consists primarily of how to dress themselves, keep themselves clean, and to eat discriminately. Many of them are physically incapacitated, and are placed in hospital or infirmary wards under medical care.

Middle grade mental defectives (imbecile) are capable of learning to dress themselves, to keep clean, and to adjust socially to others. In many cases they can be trained to do simple chores around the house or institution. They can rarely learn more than simple counting and possibly reading of a few simple words such as signs for their own protection. They either remain at home under the supervision and care of their parents, or, like idiots, are committed to institutions, for the mentally deficient. In institutions they are capable of learning routine jobs, such as caring for their beds, washing dishes, taking care of lawns, and in some cases aiding in the farm duties.

The high grade mental defective with proper training can achieve academically from the first to the fourth grade, can learn simple trades, participate in the world's work, and become partially or wholly self-supporting provided he has sympathetic direction.

The borderline type of retarded child is usually trained in the public schools. He may be sent to the prevocational school where emphasis is placed on manual rather than mental work. The great majority of these children, however, remain in the regular grades of the public schools, and are considered dull, overage for their group, or indifferent to school work.

Mental defectives occur in the ratio low (idiot) 5, middle (imbecile) 25, and high (moron) 70. Of the largest group (morons) only a small per cent are institutionalized, mainly those who become asocial. A large percentage of the two smaller groups—middle and low—are placed in the institution. Since only approximately seven per cent of all mental defectives are institutionalized the problem of their care and training lies mainly in the home and in the community.

In the past decade considerable, yet inadequate, effort has been made in the interest of the mental defective in the community. This should start at the family level. There are in some of the large cities parent organizations that render valuable aid. In addition there are many social agencies as Public Welfare, Social Service, various other lay and church organizations that furnish some assistance to the family, but these efforts are limited and frequently overlap. In this effort much assistance and direction can be obtained by individuals, an agency, or community from the strategically located mental hygiene clinics and the two State Training Schools under the supervision of the State Department of Mental Hygiene and Hospitals.

Public school systems in many larger cities employ one or several of the following procedures: (a) The Segregated Departmental Special School, (b) The Ungraded Special Class, (c) The Homogenous Special Class, (d) The Modified Special Class. Public schools in cities of lesser population employ in the

main the Ungraded Special Class or the Modified Special Class. In practical application and from an administrative standpoint the Special Class for Retarded Children presents obstacles well known to educators, and is receiving well deserved consideration from them. Public schools in Virginia that currently have special classes for those of retarded intellect are located in Alexandria, Danville, Norfolk, Richmond and Roanoke.

Training in institutions for mentally retarded children in many of the State and private institutions has become highly specialized. Emphasis is placed on manual training with a feasible degree of academic schooling, supplemented by a full program of recreation. The program endeavors to make life happier for all grades and for those who can return to society to instill into them accepted ethical standards and the capacity to live without being economically dependent.

With the expanding facilities now under construction at the Training School at Lynchburg and the new enlarged institution for Negro mental defectives to be erected on the Elko site near Richmond, we anticipate very effective work with the feeble-minded.

BOOK ANNOUNCEMENTS

Primer of Allergy. By WARREN T. VAUGHAN, M.S., M.D., Richmond, Virginia. Third Edition, Revised by J. HARVEY BLACK, M.D., Dallas, Texas. St. Louis, The C. V. Mosby Company, 1950. 175 pages with illustrations by John P. Tillery. Cloth. Price $3.50.

The Salt-Free Diet Cook Book. By EMIL G. CONASON, M.D., and ELLA METZ. Lear Publishers, New York. 1949. 144 pages. Cloth. Price $3.00.

Physicians' Desk Reference to Pharmaceutical Specialties and Biologicals. 1950. Five Sections. J. Morgan Jones, Editor and Publisher, Richard R. Maehler, Editor, Compilation and Arrangement; and Raymond J. Jaeggi, Assistant to Editor and Publisher. Medical Economics, Incorporated, Rutherford, N. J., 1949. 632 pages. Cloth.

Essentials of Obstetrical and Gynecological Pathology. By ROBERT L. FAULKNER, M.D., F.A.C.S., Assistant Professor of Gynecology, The Western Reserve Medical School; Associate Gynecologist, University Hospitals of Cleveland, Ohio. And MARION DOUGLASS, M.D., Formerly Assistant Professor of Gynecology, The Western Reserve Medical School. St. Louis, The C. V. Mosby Company. 1949. 357 pages, with 300 illustrations including 3 color plates. Cloth. Price $8.75.

Is an excellent handbook for students who plan to specialize in the field. Each subject is well presented with a brief introduction which includes the topics to be discussed in the chapter.

Its brevity is a great help in focusing the attention on the major highlights of the subjects.

Each chapter is very well illustrated by means of diagrams, photographs and microphotographs which make the illustrations an integral part of the book.

The absence of bibliographies at the ends of the chapters is an omission which I should rather have had corrected.

The book is too brief to be adequate as a reference book for the specialist. P. F. S.

Atlas of Obstetric Technic. By PAUL TITUS, M.D., Obstetrician-Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Secretary, American Board of Obstetrics and Gynecology. Illustrations by E. M. SHACKELFORD, Formerly Medical Illustrator, John C. Oliver Memorial Research Foundation, St. Margaret Memorial Hospital, Pittsburgh. Second Edition. St. Louis, The C. V. Mosby Company. 1949. 197 pages. Cloth. Price $7.50.

As the author said in his first edition, the illustrations are the most important part of this work. The same high quality is exhibited in the second edition. Miss Shackelford has a gift of grasping the essential features and not overloading her drawings with unessential details. I have only two small criticisms of the illustrations. B. of Fig. 87 might be left out entirely. When the head reaches this stage the forceps can be removed. If episiotomy be done the head will drop out or, if one prefers, it can be delivered by fundal pressure. Forceps is an instrument for traction. From this picture you get the impression that it is used for compression. The operator has his index finger between the handles but in spite of this he appears to be squeezing on the handles.

In Fig. 98 the Kielland forceps do not show the rounded portion of the shanks that should rest on the baby's head before the anterior blade is rotated.

The second edition has been enlarged and brought up to date. Sections on antepartum care and analgesia and anesthesia have been added and those on pelvimetry and forceps have been rewritten. It is a book well worth while to have around for a quick review of operative technic.

M. P. R.

MEDICAL SOCIETY OF VIRGINIA

Report of Delegates to the American Medical Association

The interim session of the House of Delegates of the American Medical Association was held at the Hotel Statler, Washington, D. C., December 6-8, 1949 coincident with the clinical sessions, which took place at the National Guard Armory. The latter was the largest of its kind ever held, more than 8,400 being registered, including more than 3,000 fellows of the Association. A new feature, and one that proved popular, was the introduction of technicolor television.

In his address to the House, President Irons discussed the educational campaign now under way, its objectives and progress, and its apparent effects so far upon the Federal program for compulsory health insurance. He stressed the importance of enlisting not only the full cooperation of all members of the medical profession, but also that of all other groups whose independence is endangered by the regimentation inherent on the welfare state. In his opinion, much has been accomplished, but the danger has not been averted, and he feels that it is necessary that the work of informing the public as to the true issues and promoting voluntary plans for sickness insurance be carried with unceasing vigilance.

By far the most notable action of this session was the amendment to the by laws providing for the payment of dues by members of the American Medical Association. The House of Delegates believes that this Association, like other great national organizations, must provide a stable form of finance by dues instead of by voluntary contributions. This is necessary in order to support its large and expanding program for service to the profession and to the public. Heretofore membership in the American Medical Association has been automatic for members of component state societies, and no dues have been required. The new amendment now in effect provides that in addition to membership in a component society, membership in the American Medical Association will be contingent upon the payment of annual dues of $25.00 to be collected by constituent associations. Delinquency in payment of dues will mean forfeiture of active membership. Exemption from the payment of dues will be possible for those who have retired because of age or physical disability or in case of financial hardship, but it is expected that all physicians in active practice and medical teaching will maintain their membership and thus contribute to the great work being undertaken by the American Medical Association.

For the second time a resolution was introduced providing for the creation of a "Junior American Medical Association", composed of students in medical schools and internes. The House of Delegates was in complete accord with the basic idea of this resolution but felt that a plan for putting it into effect would require further study. It was therefore referred to the Board of Trustees with the recommendation that necessary studies be made and that a plan for effecting such an organization be presented to the House at its next session.

The Board of Trustees announced the retirement of Dr. Morris Fishbein as editor of *The Journal,* thus ending 37 years of devoted and distinguished service to the American Medical Association. Dr. Fishbein has been succeeded by Dr. Austin Smith, who for some time has been assistant editor. The Board also commended those states that have set up Grievance Committees and recommended that states that have not already done so establish such committees.

During several recent sessions of the House, including the last, resolutions have been introduced dealing with the care of veterans with non-service connected disabilities, and the subject has been actively discussed. The House went on record as believing that such veterans should be cared for by existing civilian facilities, but no specific recommendation to Congress for necessary changes in the law were agreed upon at this session. However, a special committee under the jurisdiction of the Council on Medical Service was authorized for the purpose of formulating a program to be presented to the House of Delegates at its next annual session.

The report of the twelve man Coordinating Committee charged with directing the National Education Campaign was most encouraging. It was stated that more than sixty-one million people are now enrolled in voluntary health plans throughout the country and the number is steadily growing. Due to bet-

ter informed citizens, the fight before Congress for compulsory health insurance by the administration was abandoned during the last session, but will be resumed. From the voluntary assessment upon members of the American Medical Association, two and a quarter million dollars was realized.

As general practitioner of the year, the House selected Dr. Andy Hall of Mt. Vernon, Illinois. Dr. Hall is 84 years old and has been in active practice since his graduation in 1890. He has participated vigorously in medical and various other organizations affecting the public welfare and has served his country in three wars. Dr. Hall still makes house calls and goes to his office daily.

During the session, the House was addressed briefly by Mr. George Craig, National Commander of the American Legion. He reminded the House of the stand of the Legion in opposition to compulsory health insurance and pledged the continued assistance of his organization in the fight against this and other projects being urged upon the American people under the guise of welfare.

Opposition was voiced by the House to several bills before Congress dealing with various aspects of health and education. While some medical schools may be in need of Federal financial assistance it is imperative that such aid shall not be conditioned upon political control and regulation. The House also called attention to the poor physical condition of the Army Medical Library and urged upon Congress and the President that adequate housing be provided for this invaluable service.

M. H. HARRIS
H. B. MULHOLLAND
J. M. HUTCHESON

Bibliotheca Obstetrica

HEISTER, LORENZ (1683-1758): A general system of surgery, in three parts. 4th ed. Translation into English from the Latin of Dr. Laurence Heister, London, 1750.

This general Surgery which was so popular in the 18th Century reminds one of the works of Paré two Centuries earlier and, like Paré, it contains a section on Obstetrics. It has an illustration of Palfyn's forceps. After a description of the instrument Heister says: "I have indeed used this Instrument of my friend Palfinus, but without success; for if you compress the head with it gently, the Foetus is held too firm to give way to it, and, if you press it too strongly, there is danger of wounding its tender Head. I therefore endeavoured to amend the Instrument, by joining its two Parts together with a Hinge, but even then it did not answer Expectation; so that in this deplorable Situation of the Foetus we have no Remedy but the Caesarean Section, or to extract the Foetus either dead or alive with Hooks or other Instruments, to preserve the life of the Mother."

This is No. 2924 of *Bibliotheca Osleriana.* The following in Osler's note on the author: "The founder of scientific surgery in Germany, Heister was the son of an innkeeper at Frankfort. He studied at Giessen and under Ruysch, Albinus and Boerhaave at Leyden. After serving as surgeon-in-chief to the Dutch Army, he was appointed professor of anatomy and botany at Altdorf in 1710 and ten years later at Helmstädt, where he lived till his death. He was a prolific writer."

For portrait, see Proc. Charaka Club. 2:132, 1906.

EDITORIAL

John Peter Mettauer (1787-1875)

IN the first half of the 19th Century there was a great increase in surgery. Men had begun to invade the peritoneal and pelvic cavities. Nevertheless, they knew practically nothing about the healing of wounds—the influence of suture material or interference with the circulation. This was prior to any knowledge of bacteria or infection. Sutures were looked upon as irritants and were avoided whenever possible. H. S. Levert had done an interesting experiment on the effect of various ligatures in dogs for his graduation thesis and, although it was published in the *American Journal of Medical Science* in 1829, it apparently attracted little attention.

In some fields, for instance staphylorrhaphy, a perfect union was not essential for serviceable results, whereas in other fields, notably vesico-vaginal fistula, if healing were not perfect, the operation was a failure. For this reason, surgeons who successfully removed ovarian tumors, failed miserably when they attempted the cure of vesico-vaginal fistula. To make matters worse, this was a common injury following childbirth as it was then practiced. Its cure was attempted frequently and in many ways, with now and then a success. Ricci, in his *One Hundred Years of Gynecology,* devotes 16 pages to the description of the various operations, instruments, pessaries, and occlusion methods that have been used in attempting to cure these miserable patients. The pitiable condition of these sufferers has been described by Dieffenbach: "A vesico-vaginal fistula is the greatest misfortune that can happen to a woman, and the more so, because she is condemned to live with it, without the hope to die from it; to submit to all the sequelae of its tortures till she succumbs either to another disease or to old age. There is no more pitiable condition than that of a woman suffering from a vesico-vaginal fistula. The urine constantly flowing into the vagina, and partially retained there, and heated, runs down the labia, perineum and over the nates and thighs, producing a most horrible stench. The skin of these parts becomes inflamed and covered by a pustulous eruption. An insupportable itching and burning sensation tortures the patient * * *." As late as 1836 he confesses his inability to help these patients. He says "I have operated on a woman eighteen times and discharged her unrelieved. I have gathered large rooms full of these unhappy women from all parts of the country, and I have exhausted all resources and have cured but few." Yet he had the key to the situation in his possession, i.e., metallic sutures. In 1826 he introduced the use of lead sutures for staphylorrhaphy. His article was abstracted in the *Lancet.* The following year, Dr. John Peter Mettauer of Prince Edward County, Virginia, repaired a cleft palate using interrupted sutures of lead wire as Dieffenbach suggested. He was so pleased that he used them in other fields. In 1833, Mettauer reported a third degree laceration of the perineum successfully treated with metallic sutures and in 1833 he successfully repaired a vesico-vaginal fistula. This was the first successful vesico-vaginal operation in America. Hayward performed a successful operation the following year using silk sutures, which he reported in 1839. In 1851 Hayward reported 20 operations on nine patients with three successes. Pancoast reported a successful operation in 1847, and in the same year Mettauer reported six cases, with five successes which, with his first case, made a total of seven cases, with six successes, and eight years later he said that in 32 cases he had found only two that were inoperable. Gossett of London operated successfully on one case in 1834 using gilt wire sutures and a catheter of gum elastic.

The parallel between Dieffenbach and Mettauer is interesting. Dieffenbach was

a great surgeon by the virtue of his position, being head of a great teaching clinic. Mettauer was a great surgeon by Nature and practiced in a country village. Dieffenbach is credited with introducing the use of metallic sutures, but used them only because they were easier mechanically to twist than to tie in a cavity like the mouth. Mettauer recognized their fundamental advantages—non-irritability in tissue and the possibility of adjusting tension by twisting and untwisting—and used them in all fields of surgery. Dieffenbach failed miserably in his attempts to cure vesico-vaginal fistula. Mettauer was almost uniformly successful in curing vesico-vaginal fistula as well as third degree perineal laceration.

Dr. William H. Welch, in his Ether-Day oration, stated that the credit for discovering anesthesia rightly belongs to Morton, for his work influenced the whole world, whereas Long, whose discovery antedated Morton's by three years, was known only in a limited area in Georgia. Mettauer's work was recognized abroad by no less an authority than Sir James Y. Simpson. It was also known to J. Marion Sims, who is usually acclaimed the "Father of Gynecology", because he put the cure of vesico-vaginal fistula on a firm basis, and probably influenced him more than he cared to admit. When Sims in 1852 reported his first cases, he described Hayward's and Pancoast's operations and said that Mettauer of Virginia had cured a few cases using clumsy lead sutures. Sims claimed the credit for inventing silver sutures and furthermore that their introduction into surgery was the greatest advance in modern times. In the "Story of My Life" he gives the silly explanation of how he discovered silver sutures, i.e., the finding in the gutter a fine brass spring such as was used in suspenders. In other words, he tried lead sutures and failed, and adopted the silver suture because he found a brass spring in the gutter. In court, such an argument would be called a "non sequitur." It has significance only when taken in connection with his slurring remark about Mettauer having cured a few cases with his clumsy lead sutures. A cure of over 85 per cent of seven unselected cases, of what was considered an incurable condition, would hardly be termed "a few" by an unprejudiced observer. Mettauer reported seven cases by 1847. Sims, in his first report (1852), does not give the number of cases but from reading "The Story of My Life" it is evident that he had three successful cases out of seven. In May or June 1849, he had cured Anarcha, Lucy and Betsy (p. 246), and on p. 248 he says further, "Six weeks after my successes with the silver suture and just as I was beginning to revive from my long series of exhausting experiments, I completely collapsed. I was broken down, and had contracted diarrhoea, and so I took my family and went to Butler Springs. I carried three or four of my uncured patients with me who were suffering from fistula, to operate on, but was too ill to do anything." His illness lasted five years. While still in bed in Philadelphia he wrote out the history of his operations for vesico-vaginal fistula, which was published in the *American Journal of Medical Science* in 1852.

The similarity between Mettauer's and Sims' operations is interesting. Sims emphasized the important points in his operation as follows: (1) The Sims' position so as to give good exposure, (2) Sims' scissors, Sims' hooks, Sims' speculum, so as to facilitate denudation of the edges of the fistula, (3) silver (metallic) sutures, (4) retention catheter of silver. Mettauer used a lithotomy position, which is the one now generally used. He denuded the edges of the fistula with instruments that he ordinarily used in other gynecological operations. His sutures were of lead (metallic) and he used a short silver retention catheter. He reported his cases in 1840 and in 1847. Sims first reported his in 1852. Mettauer gave credit to Dieffenbach for introducing metallic sutures into surgery. Sims said he got the idea from finding a brasswire

spring in the gutter. Sims went to New York and then to Europe demonstrating his operation, and in a few years this dreadful complication of motherhood disappeared completely.

John Peter Mettauer was the son of a doctor. a nephew of a doctor, the brother of a doctor, and the father of three doctors. Two brothers, French Army surgeons, came to America with Lafayette and Rochambeau. After the surrender at Yorktown they were quartered with some French troops in Prince Edward County, where they became aquainted with the leading citizens. These persuaded Francis Joseph Mettauer to remain and practice medicine among them. Dr. Mettauer married Jemimah Gaulding, née Crump of Hanover County, and to them John Peter was born in 1787. After several sessions at nearby Hampden-Sidney, he entered the Medical Department of the University of Pennsylvania. The Medical Faculty at Pennsylvania at that time was a remarkable one; Rush, Physick, Shippen and Barton, and Mettauer was one to make the most of such instruction. Upon graduation in 1809 and service in the Philadelphia Dispensary, he returned to his beloved Prince Edward County, where except for two brief intervals, he lived a long and useful life. In the War of 1812 he was stationed in Norfolk and for a brief time he was Professor of Surgery in Washington Medical College in Baltimore. He did everything a country doctor was expected to do—treated typhoid fever and pneumonia, delivered babies when there were complications, treated puerperal fever, etc. His special bent however was surgery, and he did many operations that were not commonly done at that time. He attracted medical students almost in the beginning of his career and as they became more numerous, he organized the Prince Edward Medical Institute (1837) for more systematic instruction which ten years later became the Medical Department of Randolph-Macon College.

Much has been made of his eccentricities. He never removed his hat, even in court. Instead of riding horseback to see his patients as was customary, he had a coachman and a carriage and was usually seen reading a book. On November 22, 1875 he died of pneumonia, contracted by going in the snow to see a patient. The *Richmond Dispatch* carried an editorial which said in part "though nearly ninety years old he was in full practice, having at his home a private hospital, which was no doubt well supplied with patients. He was a man of scrupulous integrity, high tone, much culture and great gravity and dignity of manner." He was buried at Hampden-Sidney, still wearing his tall silk hat. His casket was so long that the doors of the hearse could not be closed and were tied together with a rope. Thus passed Virginia's greatest gynecologist.

This is the 10th of a series of "Doctors for whom the public should be thankful."

Does M.P. Mean Member of Parliament or Medical Practitioner?

IF the present trend keeps up it will not be long before M.P. will mean practitioner of medicine as well as Member of Parliament. Last year some of the most heated debates in Parliament were on the question whether women in labor should have analgesia or not, and if so what kind. Lady Tweedsmuir M.P. said that at least the equivalent of the present Minitt apparatus should be available, maintained and transported and that the midwives should be trained to administer anesthesia. The arguments pro and con were on a political basis. The medical aspects were entirely ignored, if one may depend upon the reports in the British newspapers. Thirteen more Socialist M.P.'s have signed the all-party motion asking the Government to allow the passage of the Analgesia in Childbirth Bill, conservative support for which was described by Mr. Aneurin Bevan as a political stunt. Mr. Thornecroft, the author of the Bill, accused

Mr. Bevan of being more concerned about the Bill than about the mothers. The British doctors claim that the National Health Act is already interfering with their maternity practice. If a mother desires institutional treatment upon domestic grounds, she is called on by a health visitor who decides whether she will have her baby at home or in a hospital. If the visitor decides on a hospital, the case is taken out of the hands of her own doctor and midwife.

Another clipping informs us that Bevan is to test B.C.G. serum clinically.

A Worthy Cause

JUST before Pearl Harbor a well known Virginia physician died and left the request that there be no flowers at his funeral but that instead contributions be made to the American Red Cross.

This was not an idle request. He had served the Red Cross in many capacities during his very active life. He knew that it was the one organization organized in advance to render aid in times of disaster. He had personally participated in the first aid, water safety and accident prevention programs.

During the hostilities which followed shortly after his death, the Red Cross was the closest tie between the servicemen overseas and their dependents at home.

The annual fund campaign for 1950 will be made from February 23 through March 7. The Red Cross is still a worthy cause.

SOCIETY PROCEEDINGS

Halifax County Medical Society.

Present officers of this Society are President, Dr. John Davis; vice-president, Dr. Stephen Childrey; and secretary, Dr. Nathaniel Ewell, Jr. All are of South Boston.

Lynchburg Academy of Medicine.

At the annual meeting of the Academy, Dr. H. H. Hurt of Lynchburg was elected president for the current year. Dr. John T. T. Hundley continues as secretary.

Dr. Russell L. Haden of Crozet, formerly head of the Department of Medicine of the Cleveland (Ohio) Clinic, was guest speaker before the Academy at its meeting on February the 20th at the Oakwood Country Club. His subject was "The Leukemias".

The Northern Neck Medical Society

Held its regular meeting at Warsaw on the evening of January the 26th, under the presidency of Dr. M. Mercer Neale of Heathsville. Interesting case reports were presented and these were discussed by members and guests of the Society. Dr. Paul C. Pearson of Warsaw is secretary-treasurer of the Society.

Plans were made to have the next regular meeting at 11.30 a.m. May the 25th at Tides Inn, Irvington.

Richmond Academy of Medicine.

The Section of the Academy on the History of Medicine was host to the general membership of the Academy on February the 14th. At this time, Dr. Wyndham B. Blanton of Richmond spoke on "Some Old Richmond Hospitals", this being illustrated with Lantern Slides. Dr. Walter A. Wells of Washington, D. C., gave a talk on "John Keats, Student of Medicine: His Teachers and Fellow-Students at Guy's Hospital". Following the program there was an informal reception in the dining room of the Academy to which members and their wives and other guests were invited.

The Warwick County Medical Society

Had its regular dinner meeting at the James River Country Club on January the 10th, with Dr. George S. Grier, III, presiding. Drs. Morris Pinckney and A. Stephens Graham of Richmond presented interesting and instructive papers on the Medical and Surgical Management of the Jaundiced Patient. One new doctor was accepted to membership.

Officers of this Society for the present year are: President, Dr. George S. Grier, III (re-elected); vice-president, Dr. William H. Woodson; and secretary-treasurer, Dr. Joseph W. Carney. All are of Newport News.

NEWS

Committee of Arrangements for Roanoke Meeting.

The Roanoke Academy of Medicine has selected Dr. George S. Hurt as general chairman in charge of arrangements for the Roanoke meeting of the Medical Society of Virginia, October 8-11, and every indication is that this will be one of the best meetings of the Society. Those to serve with Dr. Hurt are:

Dr. R. C. Crawford, Hotels and Halls
Dr. David Garner, Commercial Exhibits
Dr. Chas. H. Peterson, Scientific Exhibits
Dr. A. M. Groseclose, Entertainment
Dr. G. G. Gooch, Golf
Dr. Reverdy H. Jones, Publicity and Press

The Alexandria Medical Society

Is to hold a one day assembly on Sunday, April 16, 1950 at the Ficklin School Auditorium in Alexandria. The program will consist of eight speakers with topics covering all fields of general medicine. The Society will be host at a luncheon and a cocktail party that evening.

The registration fee for all activities will be $2.00. Registrations may be mailed to the Alexandria Medical Society, P. O. Box 192, Alexandria, Virginia.

Postgraduate Course in Pulmonary Diseases.

A one-week postgraduate course in pulmonary diseases will be given at Memphis, Tennessee, from March 20 to March 25, 1950. It is sponsored by the American Trudeau Society in cooperation with the University of Tennessee College of Medicine. The program will include not only diagnosis and treatment of tuberculosis but also the pneumonias, multiple miliary diseases, pneumoconiosis, lung abscess, pulmonary cystic disease and bronchiectasis, traumatic conditions of the chest, intrathoracic, tumors, pulmonary arterial aneurysm and arteriovenous fistula, recent advances in cardiovascular surgery, asthma-allergy, pulmonary diseases in children, and other topics.

Applications must be received by the American Trudeau Society, 1790 Broadway, New York City, by March 1. A registration fee of $50 will be charged, and living expenses in Memphis are estimated at $75. A limited number of scholarships will be offered by local tuberculosis associations. If you are interested, get in touch with the executive secretary or president of your local tuberculosis association. Programs and application blanks may be secured from the Virginia Tuberculosis Association, 504 Atlantic Life Building, Richmond.

Dr. Waverly R. Payne,

Newport News, has been appointed a member of the Council of the Southern Medical Association from Virginia for a regular Council term of five years beginning at the close of the annual meeting in St. Louis, Missouri, next November. The appointment was announced recently by the President-Elect, Dr. Curtice Rosser, Dallas, Texas. Dr. Payne succeeds Dr. T. Dewey Davis, Richmond, whose term will expire with the close of the St. Louis meeting, and who, having served the constitutional limit, is not eligible for reappointment.

Prominent Guest Speakers to be in Roanoke.

Sir Alexander Fleming, discoverer of Penicillin, Saint Mary's Hospital, London, England, and Dr. C. W. Mayo, professor of Surgery, Mayo Foundation, University of Minnesota, Rochester, Minnesota, will be guest speakers before the Roanoke Academy of Medicine, Monday evening, April 3, and members of the medical profession in Virginia are invited to attend. These doctors are among the guest faculty to appear in the Spring Graduate Course of the Gill Memorial Hospital on April 3-8.

The Annual Postgraduate Course in Diseases of the Chest,

Sponsored by the American College of Chest Physicians, Pennsylvania Chapter, and the Laennec Society of Philadelphia, will be presented at the Warwick Hotel, Philadelphia, April 10-14. This course will emphasize the recent developments in all aspects of the diagnosis and treatment of diseases of the chest, and is open to all physicians, although the number of registrants will be limited.

Information as to the course may be secured from the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

Dr. Edwin Wortham,

Who has been practicing in Richmond, has gone to San Francisco, where he will join Dr. Frederick C. Cordes, clinical professor of Ophthalmology in the University of California Medical School, and

Dr. Samuel D. Aiken, in their private practice and in the work of their department at the Medical School. Their offices are at 384 Post Street, San Francisco.

Dr. Charles A. Young, Jr.,

Has completed his residency at the Institute of Ophthalmology, Columbia Presbyterian Medical Center, New York City, and has resumed the practice of ophthalmology with Dr. Charles A. Young, Sr., and Dr. Newland W. Fountain in the Medical Arts Building, Roanoke.

Dr. E. C. Drash,

Of the University of Virginia, School of Medicine, was the guest speaker at the dinner meeting of the Roanoke Academy of Medicine on February the 6th, his subject being The Present Day Problem of Cancer of the Lung.

The American Goiter Association

Is to hold its annual meeting in the Shamrock Hotel, Houston, Texas, March 9, 10 and 11, under the presidency of Dr. Samuel F. Haines of Rochester, Minn. The program will consist of papers dealing with goiter and other diseases of the thyroid gland, dry clinics and demonstrations.

Dr. Kinloch Nelson

Has been named a member of the board of directors of the Commonwealth Club of Richmond.

Dr. Harry J. Warthen

Was recently elected as one of the directors of the Richmond Chapter of the American Cancer Society for the present year.

The Industrial Health Conference.

"Teamwork In Industrial Health" is the theme of the 35th annual meeting of the American Association of Industrial Physicians and Surgeons and four other industrial associations which will be held in the Sherman Hotel in Chicago, April 22-29. The registration during the meeting is expected to exceed 2,000.

Founded in 1915, the object of the American Association of Industrial Physicians and Surgeons is "to foster the study and discussion of the problems peculiar to industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes of medical care for employees, and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for their mutual advancement in the practice of their profession."

During the Conference, more than 20 large industrial plants in the Chicago area will have open house in their medical departments for industrial physicians and surgeons and industrial nurses.

Dr. Alfred H. Whittaker, of Detroit, is president of the American Association of Industrial Physicians and Surgeons, and Dr. Edward H. Carleton of the Inland Steel Company of East Chicago, Ind., will take over the presidency of the association at the Chicago meeting.

Professional Illustrators and Photographers.

The Academy-International of Medicine is establishing an information service on professionally trained medical illustrators and photographers who will assist the profession in the preparation of all types of papers for publication, meetings, visual demonstrations, and exhibit material. Information on illustrators and photographers is to be available, upon request, to the entire profession.

All doctors having personal knowledge of competent illustrators or photographers are requested to send the technicians' names and addresses to Academy-International of Medicine, 214 West Sixth Street, Topeka, Kansas.

Dr. Morris Fishbein,

Formerly editor of *The Journal of the American Medical Association,* has become Consultant Medical Editor for both the Blakiston Company and Doubleday and Company, Inc.

The Virginia Society of Anesthesiologists

Was formed at a meeting on January the 11th, and the following officers were elected: President, Dr. Thomas Walker, Richmond; vice-president, Dr. Alden W. Squires, Norfolk; and secretary-treasurer, Dr. Harold F. Chase, Charlottesville.

South Atlantic Association of Obstetricians and Gynecologists.

Dr. C. J. Andrews of Norfolk was president for the meeting of the Association in Roanoke, February 9-11, but, as he was unable to attend, his presidential address was presented by his son. The meeting was both interesting and pleasant. Dr. Lester Wilson of Charleston, S. C., succeeded to the presi-

dency; Dr. Emmett D. Colvin, Atlanta, Ga., was named president-elect; and Dr. John Burwell, Greensboro, N. C., secretary. It was decided to have the 1951 meeting at Ormond Beach, Florida, in February.

Prize Essay Award.

The Board of Regents of the American College of Chest Physicians offers a cash prize award of two-hundred-and-fifty dollars ($250.00) to be given annually for the best original contribution, preferably by a young investigator, on any phase relating to chest disease. The winning contribution will be selected by a board of impartial judges and the first award will be made at the forthcoming annual meeting of the College to be held in San Francisco, June 22-25, 1950.

The following conditions must be observed:

(1) Five copies of the manuscript, typewritten in English, should be submitted to the office of the American College of Chest Physicians not later than May 1st, 1950.

(2) The only means of identification of the author or authors shall be a motto or other device on the title page and a sealed envelope, bearing the same motto on the outside, enclosing the name of the author or authors.

Additional information may be obtained from the Executive Secretary of the College, 500 North Dearborn Street, Chicago 10, Illinois.

Jefferson Medical College,

With the collaboration of the Surgeon General's Office of the U. S. Army, in January began its course in Medical Aspects of Atomic Energy—the first to be given in any of the nation's medical schools. This consisted of eighteen lectures and demonstrations, for third-year students, aimed by the Surgeon General's office to serve as a pilot for introducing similar special courses in the other medical colleges. This is part of the evolving nation-wide plan of the Defense department and the National Security Resources Board to better prepare physicians for the organization of medical services in the event of atomic disaster.

While students, in regular department courses, have studied the nature and treatment of the type of injuries resulting from atomic exposure, there has not previously been an organized course to cover all phases of medical services in such disaster periods.

The opening lecture on "The Problems of the Physician in Atomic Disaster" was given by Colonel James P. Cooney, Chief of the radiological branch, military application division, of the Atomic Energy Commission, who was in charge of the biologic investigations which arose out of the Bikini and Eniwetok atomic bomb tests.

Professors of the departments of surgery, medicine, radiology, hematology, and military science gave a lecture throughout the semester, which covered fundamental scientific principles and their application to alterations in man and his environment caused by exposure to atomic energy. The radiobiologic problems of exposure to atomic energy including the response of various tissues and genetic effects were considered with detailed attention to blast, thermal, and radiation effects. Motion pictures documented by the U. S. Army illustrating the results of explosions of an atomic bomb were shown.

Postgraduate Course on General Surgery

"Practical Problems in General Surgery" is the subject of a continuation course to be presented on April 6, 7 and 8 by the Frank E. Bunts Institute and the Cleveland Clinic. On Friday evening, April 7, Dr. Daniel C. Elkin of Emory University, Dr. Claude Beck of Western Reserve University Medical School, and Dr. R. B. Turnbull of the Cleveland Clinic will take part in a symposium on "Vascular Surgery". On Saturday morning, April 8, Dr. George G. Finney of Johns Hopkins University and others will present Panel Discussions on surgery of the colon, pancreas, biliary tract, and stomach and duodenum.

Inquiries regarding the complete program and registration can be addressed to the Director of Education, Frank E. Bunts Educational Institute, 2020 East Ninety-third Street, Cleveland 6, Ohio.

Dr. Douglas G. Chapman

Has been elected president of the Richmond Chapter of the American Heart Association, succeeding Dr. William H. Higgins.

Dr. Harper Transferred.

Dr. Edgar C. Harper, since May 1946 tuberculosis control officer at McGuire Veterans Hospital, Richmond, has been transferred to Mountain Home, Tenn., Veterans Hospital, where he will be chief of tuberculosis service. Dr. Wyatt E. Roye will remain at McGuire as chief of the tuberculosis service.

Dr. Harper is well known in Virginia as a former director of the tuberculosis field service of the Virginia State Health Department and also served in various capacities with the Health Department. During World War II, he was named deputy chief of emergency medical service in Virginia.

Promotion.

Dr. Charles C. Canada, formerly of Arlington before entering the Service, has been promoted to the rank of Lieutenant Colonel of the Medical Corps and is in the Far East Command.

Richmond's New Filter Plant

A formal dedication program March 15 is being planned by the Department of Public Utilities in cooperation with other city departments to allow Richmonders an opportunity to see first hand the new filter plant which is capable of handling 36,000,000 gallons of water a day. The following four days—March 16, 17, 18 and 19—citizens will be able to join hourly guided tours through the entire filter plant to learn how water is drawn from the James River and purified for public consumption.

Dr. F. M. Horsley

Of Arrington, on account of his health, has a leave of absence for several months, from the Alberene Stone Corporation at Schuyler, where he has practiced for the past eleven years.

Dr. Stanley H. Macht,

Class of '39, University of Virginia, Department of Medicine, and a native of Crewe, has been made director of the X-ray department of the Washington County Hospital at Hagerstown, Maryland, effective January 1. He is a diplomate of the American Board of Radiology, and was formerly assistant professor of roentgenology of the University of Maryland Medical School and director of the department of radiology at the Baltimore City Hospitals.

Dr. M. Pierce Rucker,

Richmond, editor of the VIRGINIA MEDICAL MONTHLY, and Mrs. Rucker left Richmond on the 16th of February to take the plane in New York for a winter vacation in Italy and Southern France.

Dr. Franklin D. Freda,

Formerly of Lynchburg, has located for practice at 709 Gloucester Drive, Newport News.

Dr. William H. Zimmerman,

Recently of Keokee, has returned to his home state and is engaged in general practice at Dublin, Indiana.

Dr. Julian R. Beckwith,

Chief of the medical service at the Chesapeake & Ohio Hospital at Clifton Forge, has been named a lecturer in internal medicine at his alma mater, the University of Virginia, effective February 1.

Office Space Available.

Office space is available for two doctors in the corner building at 932 West Franklin Street, Richmond. Call 4-3380. (*Adv.*)

OBITUARIES

Dr. Charles Wesley Pritchett,

Dean of the Danville medical profession, died January 26, after an illness of three weeks. He was eighty-five years of age and a graduate of the College of Physicians and Surgeons of Baltimore in 1886. He first located at Keeling, but twelve years later, after post-graduate work in Baltimore and New York, moved to Danville. He practiced medicine for sixty-three years and in 1948 was in the first 50-Year Club recognized by the Medical Society of Virginia. Dr. Pritchett was a former president of the Danville Academy of Medicine which, in 1939, presented him with a silver loving cup in recognition of his years of medical service in that community. He was active in civic affairs, church work, and was a Mason and a Shriner. He is survived by his widow and a son by a former marriage.

Dr. Samuel H. Garst,

Prominent surgeon of Staunton, died at his home there on February 7, following a heart attack from which he had suffered on several occasions. Dr. Garst studied medicine at the University of Virginia from which he graduated in 1931. He had lived in Staunton since 1935 and joined the Medical Society of Virginia the following year. He was active in

church and civic affairs and was president of the Augusta County Medical Association in 1940-1941. He is survived by his wife, a daughter, and his parents.

Dr. Louis C. Haynes,

Formerly of Mount Jackson, but who joined the staff of the Newton D. Baker Veterans Hospital at Morgantown, W. Va., in September 1948, died January 8 of chronic emphysema. He was a graduate of the Medical College of Virginia in 1913 and practiced for five years in Franklin County until he joined the Army in World War I. Shortly after the war, he located at Mount Jackson and took an active part in medical affairs of that community until forced to curtail his work on account of his health.

The following resolutions were passed by the Shenandoah County Medical Society at their meeting January 12, 1950.

WHEREAS it has pleased our Heavenly Father to remove from our midst a former secretary of the Society, Dr. L. C. Haynes:

BE IT RESOLVED that in the passing of this member, our Society has sustained a profound loss as well as the respective community in which he lived;

BE IT RESOLVED that we, the members of the Shenandoah County Medical Society, extend to his family our sincere sympathy in their bereavement;

AND FURTHERMORE BE IT ROSOLVED that a copy of these resolutions be spread on the minutes of our Society, and that a copy be sent to his widow.

FRANK W. GEARING, JR.,
Secretary.

Dr. William Gay Christian,

Former professor of anatomy at the University of Virginia and at the Medical College of Virginia, died at the home of his son in Orange County on January 21 at the age of eighty-seven. He graduated in medicine from the University of Virginia in 1889, and taught there until 1905. He then entered private practice where he stayed until he joined the faculty of the Medical College of Virginia. He retired from this work in 1923, and resumed private practice. In addition to his teaching, he was also the author of several text books on anatomy and physiology. Six children survive him.

Resolution on Dr. Hugh H. Trout.

The Roanoke Academy of Medicine regrets deeply the loss of one of their oldest and most beloved members, Dr. Hugh H. Trout, whose death occurred at his home in Roanoke, Virginia, on January 13, 1950, at the age of seventy-one.

Dr. Trout graduated at the University of Virginia in 1902. He interned at Johns Hopkins Hospital and was surgeon at St. Joseph's Hospital, Baltimore, Md., in 1904 and 1905. He was at Union Protestant Infirmary, Baltimore, Md., in 1905 to 1908. During his stay in Baltimore he formed a very close friendship with the Hopkins group and this close friendship has always been maintained. He also spent sometime in studying abroad.

In 1908, he established the Jefferson Hospital. During World War I, he closed this hospital to go abroad with the surgical staff and nurses, where he was in active service and Lieutenant Colonel, U. S. Army Corps.

Dr. Trout was Past President of the Roanoke Academy of Medicine, the Medical Society of Virginia, Southern Surgical Association and Fellow of American College of Surgeons, member of the American Surgical Association and many other surgical groups where he formed a very wide acquaintance and many friends everywhere. He has written many surgical articles and taken part in many surgical meetings. He was a member of the Board at The University of Virginia and on the Board of Virginia Episcopal Seminary. He was Chairman of the Procurement and Assignment Committee of the State of Virginia in World War II, a most difficult job which he did very well. He was boundless in energy, taking part in many of our civic organizations.

BE IT THEREFORE RESOLVED That the Roanoke Academy of Medicine wishes to express to the family of Dr. Hugh H. Trout, their sincere sorrow in his sudden passing.

The medical profession has suffered a great loss. He gave freely of his time and talents to the advancement of the medical profession. His attractive personality and capacity for handling people endeared him to his patients and professional colleagues.

The community has lost a valuable and loved citizen, the medical profession a talented physician and one who will be greatly missed.

BE IT FURTHER RESOLVED That a copy of these resolutions, be sent to his family, be recorded in the minutes of the Roanoke Academy of Medicine and be sent to the VIRGINIA MEDICAL MONTHLY.

W. R. WHITMAN
GEORGE B. LAWSON
W. L. POWELL

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March 20-25, 1950

The faculty will consist of prominent teachers and clinicians in the field of pulmonary diseases.

The course will be of value to physicians interested in both tuberculous and non-tuberculous pulmonary diseases and is limited to fifty students.

A fee of $50 will be charged for the entire course. Checks should be made payable to the American Trudeau Society and accompany application blank.

Application blanks and additional information can be obtained from the

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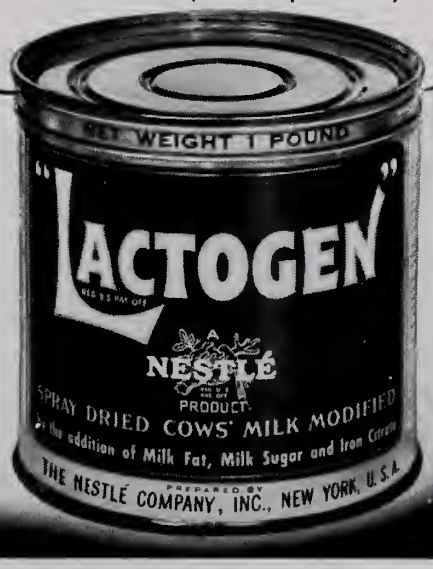

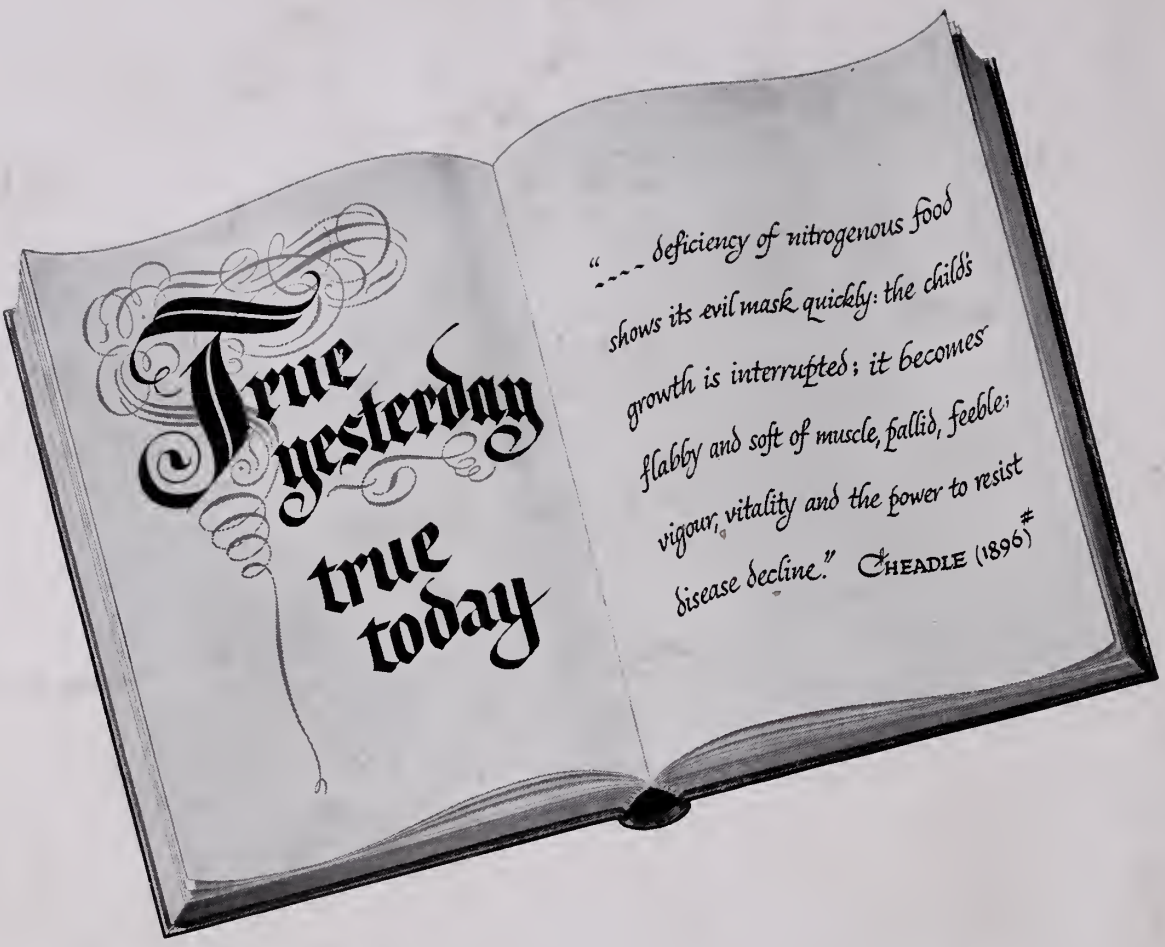

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#Cheadle, W. B.: Artificial Feeding of Infants, 1896; Cited by Clements, A. D.: M. J. Australia 2:404, 1946.

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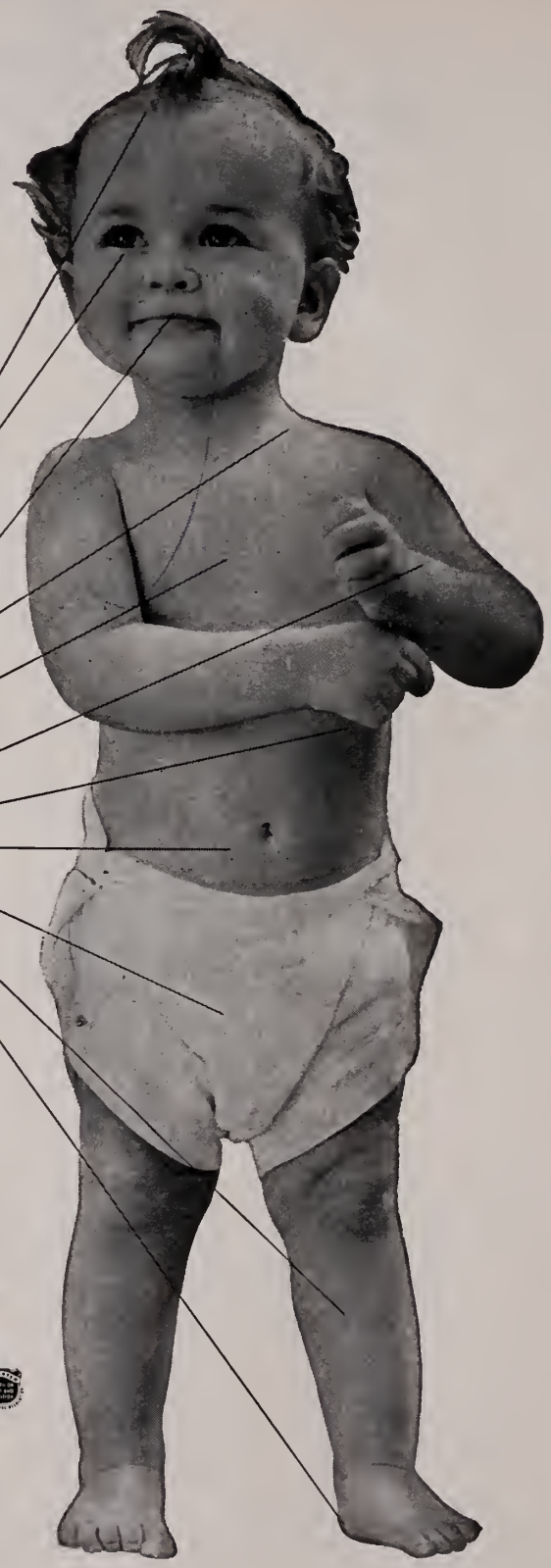

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GUEST EDITORIAL

Your Grievance Committee

THE matter of establishing and expediting the functions of a grievance committee has been of interest to the officials of the American Medical Association. Ideas have been formulated and passed on to the state societies with the view of encouraging widespread interest in this vital subject.

Several states have concerned themselves with the setting up of Grievance Committees, Virginia being among the earliest to take definite steps in this regard. There is a committee formed at the State level with emphasis placed on the establishing of similar committees at the local level, for as in other matters in Virginia, local autonomy is regarded as essential.

Initial steps toward organizing this committee in Virginia were taken more than a year ago. The original committee, composed of five active past-presidents, upon appointment considered its responsibilities and made a report to the House of Delegates of the Medical Society of Virginia endorsing the principle and encouraging the local medical societies to set up their own grievance committees.

Before taking definite action, it is believed important to give thorough consideration to the personnel recommended for the Committee along the lines of ethics, local standing, professional prestige, etc.

The type of publicity given the establishing of the Grievance Committee is highly important. It seems that the fact that the Committee has been set up should be publicized but not in any manner that would indicate any degree of alarm on the part of the profession over this action. The point should be emphasized that the Committee must of necessity concern itself with true cases of grievances and try to minimize those concerned with minor issues that can best be settled through other channels.

A question much discussed in the past concerns the advisability of lay people being appointed to serve as members of a grievance committee. It is believed important that the task of administering the affairs of a grievance committee should be entirely in the hands of the medical profession. This would tend to establish a point of common interest and understanding and minimize time consuming differences.

A point to be noted by the profession is the difference between the working of the Grievance Committee and the Ethics Committee. The former concerns itself with the unprofessional conduct of the members of the profession, while the latter is primarily for dealing with the relationship between the doctor and his patient. A thorough understanding of this point is necessary to the proper functioning of these two important separate committees.

In summary, important points to be considered in setting up a grievance committee are: (1) local autonomy, (2) qualified, interested personnel, (3) proper publicity, (4) inadvisability of lay people as members, and (5) the functions of a grievance committee.

FUNCTIONING CANCER*

ALBERT C. BRODERS, M.D.,
Division of Surgical Pathology, Mayo Clinic,
Rochester, Minnesota.

When Dr. Guy Horsley invited me to address the Richmond Academy of Medicine in memory of his distinguished father, Dr. J. Shelton Horsley, I was greatly honored and filled with pride, for I deem it a high privilege to give this lecture.

Dr. J. Shelton Horsley was well known in this country and abroad as an outstanding surgeon, however, his surgical skill alone does not account for his fame. He was one of those rare individuals in the medical profession who possessed the combined attributes of a skillful surgeon, a practical physiologist, a good surgical pathologist, a scientist of note, an excellent writer and an outstanding teacher who contributed greatly to raising the standard of medicine in this country. I consider it a rare privilege to have been one of his students during my days in medical school and as one of his many ardent admirers, I shall always cherish his memory.

Because of Dr. Horsley's intense interest in the cancer problem, I deem it pertinent to speak on something in that field. Therefore, I have chosen for the subject of my address an apparent, though not a real, contradiction in terms, namely, "Functioning Cancer."

To those who look on cancer as an anarchistic proliferation of epithelial cells, the term "functioning cancer" must sound like heresy; nevertheless, since the turn of the century, incontrovertible evidence has been brought forth in support of the contention that some cancers do function in a way similar to the cells of the epithelial structures from which they arise. I have chosen to use the general term "cancer" rather than the more specific term carcinoma in most places in this address.

HISTORICAL ASPECTS

In 1901 von Eiselsberg reported a case of what he evidently recognized as functioning cancer of the thyroid gland with metastasis. After total extirpation of the goiter in 1886 unmistakable symptoms of myxedema (cachexia thyreopriva) appeared. The myxedema decidedly improved from the moment in 1888 that a tumor developed in the sternum. It became necessary to resect the sternum and remove the tumor in 1892 because of symptoms of pressure. This operation was followed by the return of the myxedema. In 1894 a tumor appeared in the scapula which was incapable of influencing the myxedema, and the patient died in 1895.

When von Eiselsberg reported this case he also called attention to a case of functioning cancer of the liver with metastasis that had been reported by Perls. The function of the cancer was evidenced by the fact that bile was demonstrated in the primary and metastatic growths. He pointed out that function of a metastatic lesion that repeats the structure of the normal thyroid gland is understandable, that the deviation of the tumor cells from the parent tissue is, as M. B. Schmidt ably put it, "very slight," that the individuality of the thyroid gland is repeated in them and thereby prepares a sound condition for secretion. He summed it up by the statement that it is remarkable that the metastatic lesion of typical columnar-cell carcinoma of the thyroid gland which contains colloid can substitute vicariously for the extirpated goiter. Despite Conheim's thesis which presumed that tissue composing true neoplasia does not function, von Eiselsberg's discussion in connection with his case of cancer of the thyroid gland and Perls' case of cancer of the liver, indicated that he felt that Perls' case and his own were examples of functioning cancer though he was not quite willing to come to such a conclusion without a modifying reservation.

In 1906 von Hansemann wrote an article concerning the function of tumor cells. In this article he pointed out the existence of a rather large though scattered literature concerning the function of tumor cells, and that strictly speaking the question in regard to the function of tumor cells had been taken into consideration from the time the interest in tumor cells began. He stated further that he had repeatedly expressed opinions in a clear and unequivocal manner on the function of tumor cells, especially in con-

*Read at the third annual Horsley Memorial Lecture of the Richmond Academy of Medicine, Richmond, Va., April 26, 1949.

nection with a discussion of the diagnosis of malignant tumors. He also pointed out that there never had been any disagreement with the opinion that the cells of benign tumors carry on function and that this function corresponds to that of the parent tissue. He cited examples like the secretion of mucus by a polyp of the mucous membrane, the production of milk in an adenoma of the breast during lactation, the contraction of a myoma by means of electrical stimulation and so forth. However, he stated that there had always been doubt as to whether the cells of malignant tumors display function. For some time such a function had been denied from many sides on the grounds that one of the differences between benign and malignant tumors was the apparently accepted hypothesis that the cells of the former had a function and the cells of the latter had none. He contended, however, that the cells of certain malignant tumors do function and in support of his contention cited Perls' case of primary cancer of the liver with metastasis in which bile was produced in both the primary and secondary growths. He also cited von Eiselsberg's case of cancer of the thyroid gland with metastasis as an example of functioning cancer. He maintained that the disappearance of myxedema when the metastatic lesion in the sternum developed was due to function on the part of the metastatic lesion. Furthermore, the reason that the myxedema which reappeared after the removal of the sternal metastatic tumor failed to disappear when a metastatic tumor developed in the scapula was due to an increase in anaplasia of the cancer, and hence, it was no longer in a position to carry out the function of the thyroid gland. Von Hansemann, in summarizing his article said, that the cells of the malignant tumors possess a function which follows that of the normal tissue from which the tumors arise. With increasing anaplasia of the cells, the function first changes quantitatively and then also qualitatively. Whether the function of the cells always stops completely in the presence of marked anaplasia has not been affirmed thus far because "its morphologic expression has been so far reduced that it may no longer be recognized in the usual manner." Still it may be concluded from the form of the cells and the structure of such tumors with very marked anaplasia that the cells finally have no other function than is absolutely necessary for their maintenance and their propagation.

TYPES OF HORMONES PRODUCED BY NEOPLASMS

At this point, I should like to call attention to a list of hormones and the neoplasms, both malignant and benign, in which they are found. This list was kindly compiled for me by Dr. Alexander Albert, endocrinologist of the Mayo Clinic, and is as follows:

TYPE OF HORMONE	TYPE OF TUMOR
Estrogen	Granulosa-cell tumor, chorio-epithelioma of testis, adrenal tumors
Pregnanediol	Adrenal tumor, testicular tumor (presumably a chorio-epithelioma)
Androgens	Arrhenoblastoma, adrenal tumors, Leydig-cell tumor
Corticoids	Adrenal tumors, adrenal-cell carcinoma (ovary)
Chorionic gonadotropin	Seminoma, chorio-epithelioma, pinealoma
Adrenalin	Pheochromocytoma and related tumors
Thyroxin	Some types of thyroid carcinoma
Insulin	Islet-cell tumors
Parathyroid hormone	Parathyroid adenoma and carcinoma

FUNCTIONING CANCER OF THYROID GLAND

Von Eiselsberg's case reminds me of a case of functioning cancer of the thyroid gland with metastasis to the skin, sections of which I examined a number of years ago for a physician not connected with the Mayo Clinic. The patient was suffering from hyperthyroidism and when the primary and metastatic cancers were reduced by roentgen irradiation, the hyperthyroidism showed a marked tendency to subside but returned to its former state of activity after recurrence of the primary and secondary growths. Microscopic examination of sections of one of the metastatic tumors of the skin from the shoulder showed areas of adenocarcinoma, grade 1 (on a grading basis of 1 to 4 in which grade 1 is the least malignant and grade 4 the most malignant), parenchymatous hypertrophy with papillary infolding comparable to that seen in exophthalmic goiter and typical colloid goiter in which the follicles were lined with low cuboidal and practically flat epithelium (figs. 1 and 2).

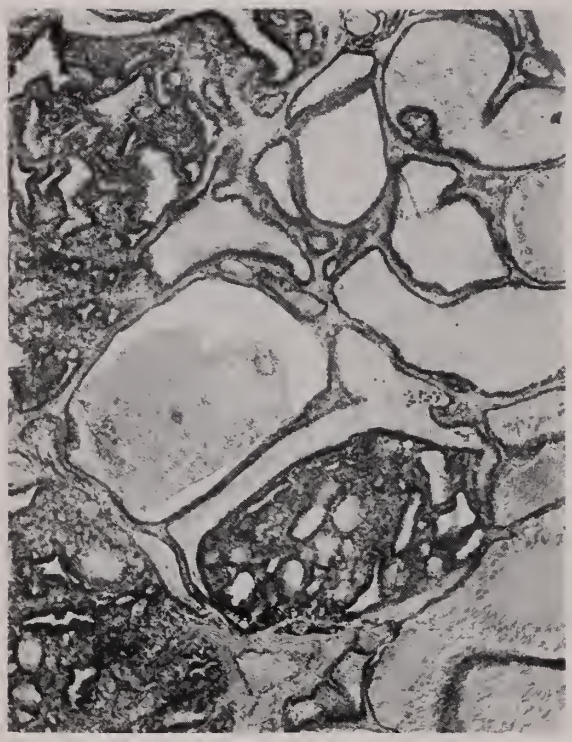

Fig. 1.—Adenocarcinoma, grade 1, in skin of shoulder; metastatic from the thyroid gland. A tendency to imitate an exophthalmic goiter including papillary infolding of the epithelium may be noted (hematoxylin and eosin x60).

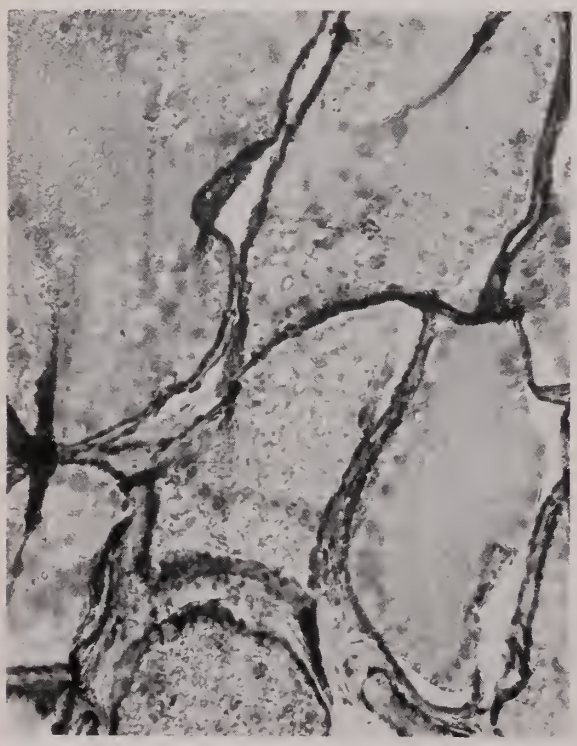

Fig. 2.—Adenocarcinoma, grade 1, in skin over shoulder; metastatic from the thyroid gland (same case as in figure 1). Differentiation into a colloid type of goiter is evident (hematoxylin and eosin x150).

Friedell, in a careful study of the relationship of hyperthyroidism to adenocarcinoma of the thyroid gland, in 412 cases of adenocarcinoma showed that hyperthyroidism was associated in 17.6 per cent of the cases of adenocarcinoma, grade 1, in 15.4 per cent of those of grade 2, in 11.7 per cent of those of grade 3 and in 5.6 per cent of those of grade 4 and in an average of 13.8 per cent of all cases. After the cases of parenchymatous hypertrophy, both intra-adenomatous and extra-adenomatous were deducted, 12.7 per cent of the patients with adenocarcinoma, grade 1, 11.4 per cent of those with grade 2, 10.2 per cent of those with the grade 3 and 4.3 per cent of those with adenocarcinoma, grade 4, or an average of 9.8 per cent of the patients had associated hyperthyroidism.

The evidence on which function of a primary or metastatic cancer of the thyroid is based is as follows: Colloid has been found in well-developed follicles lined with columnar, cuboidal or even flat epithelium unassociated with intra-adenomatous or extra-adenomatous parenchymatous hypertrophy of the noncancerous part of the thyroid gland in cases in which hyperthyroidism is present and both the primary and metastatic cancers have been found by assay to contain thyroxin. Any doubt which this evidence leaves concerning the presence of functioning cancer should be dispelled by the not infrequently proved up-take of radioactive iodine by primary and metastatic cancers.

Functioning Parathyroid Cancer

For years I have contended that the large majority of neoplasms which originate in the parathyroid gland, regardless of whether the growths are totally within the confines of the capsules of these glands, are cytologically cancer and that only a small minority are true adenomas.

Since 1904 when Askanazy associated what he called "osteitis deformans," but which was evidently generalized osteitis fibrosa cystica, with a neoplasm of parathyroid origin, an undoubted case of hyperparathyroidism, a relatively large number of cases of hyperparathyroidism with associated parathyroid neoplasia have been reported. In the large majority of the reported cases, the parathyroid neoplasm was placed in the adenoma category and hence was considered benign. Mandl of Vienna in 1926 removed a parathyroid tumor from a patient with generalized

osteitis fibrosa cystica and hence, was the first to treat hyperparathyroidism by surgical removal of the offending neoplasm.

In 1944 Alexander, Pemberton, Kepler and I reported on 14 cases of functioning parathyroid tumors in which the patients had undoubted evidence of hyperparathyroidism. We placed 13 (92.8 per cent) of these neoplasms in the cancer category and 1 in the adenoma category (fig. 3). None of the 13

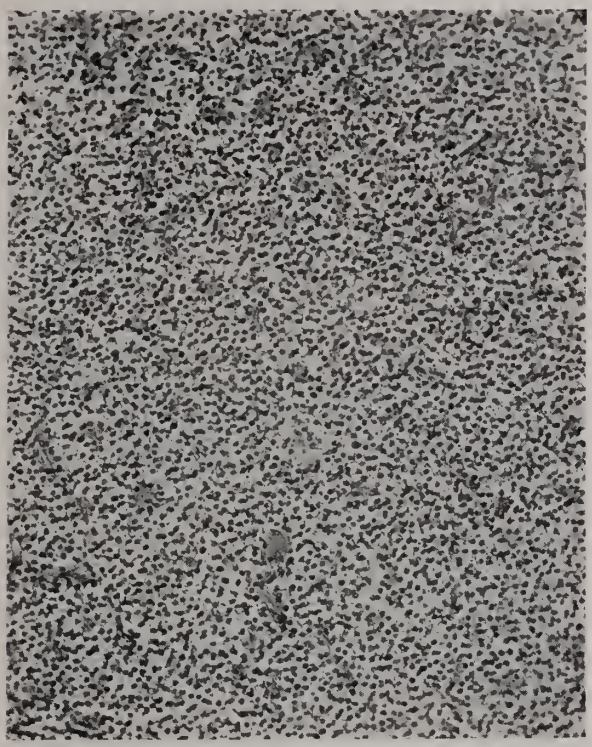

Fig. 3.—Adenoma of parathyroid gland consisting of small chief cells (hematoxylin and eosin x180). Case from Alexander, Pemberton, Kepler and Broders; (case also reported by Pemberton and Geddie). Reprinted with permission of the American Journal of Surgery and the authors from Alexander, Pemberton, Kepler and Broders.

cancers had metastasized, although in 4 (28.6 per cent of the 14) there was evidence of invasion of the capsule. The clinical aspects of case 1 were reported by Wilder in 1929, the surgical aspects by Rankin and Priestley and the pathologic features of the neoplasm were reported by Wellbrock. Wellbrock called it a "malignant adenoma." This parathyroid tumor, the second to be removed for hyperparathyroidism in the United States is the first recognized functioning cancer of the parathyroid gland to be reported. Case 2 was reported by Pemberton and Geddie; case 3 by Allan; case 4 by Wilder, Camp, Robertson and Adams and by Rankin and Priestley; case 5 by Brown and case 7 by Snell and discussed by Mayo. Alexander, Pemberton, Kepler and I reported case 11 through the courtesy of Dr. Frank Heck. The fact that we found 92.8 per cent of 14 parathyroid neoplasms to be cancer on microscopic examination is in marked contrast to the report of Cope in 1941 on 58 parathyroid adenomas observed at the Massachusetts General Hospital. He stated that in no instance was there any microscopic evidence of malignancy in these adenomas and asserted that carcinoma of the parathyroid gland is a rare disease.

In 1941 Gentile, Skinner and Ashburn reported the first case of funtioning parathyroid cancer with metastasis to regional lymph nodes. Their patient had osteitis fibrosa cystica and typical hyperparathyroidism. In January, 1948, Black reported the first case of functioning parathyroid cancer with matastasis observed at the Mayo Clinic. The metastasis had occurred in three deep jugular lymph nodes (fig. 4). The patient had hyperparathyroidism and osteitis fibrosa cystica generalisata. It is

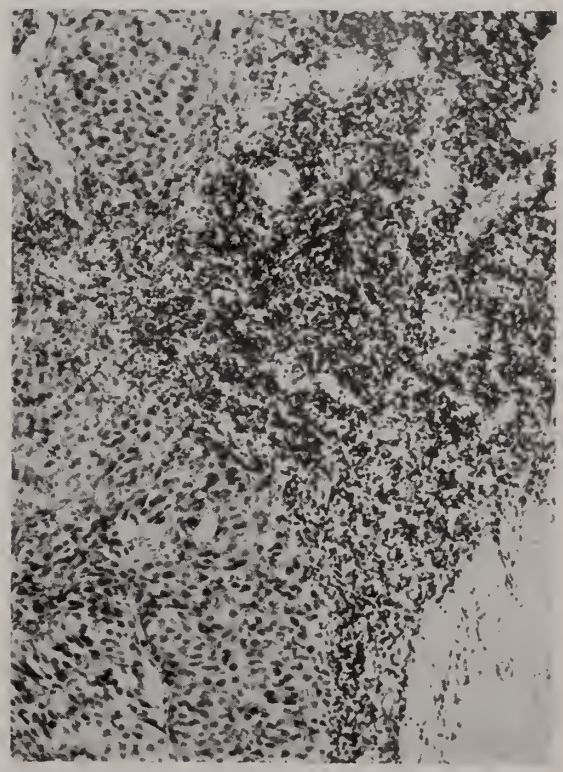

Fig. 4.—Parathyroid adenocarcinoma, grade 3, in a right lower deep jugular lymph node (hematoxylin and eosin x435). Reprinted with permission from Black.

interesting to note that some of the parathyroid cancers without metastasis on which we had reported presented a histologic picture comparable to Black's case in which metastasis had occurred (figs. 5 and 6).

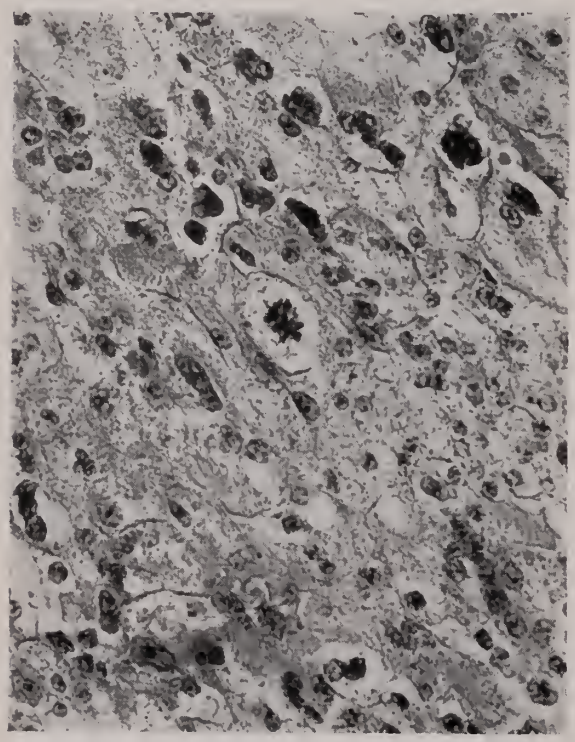

Fig. 5.—Adenocarcinoma, grade 2, of parathyroid gland showing irregular arrangement of cells with variously sized, shaped and hyperchromatic nuclei. Pathologic mitotic figure in the center of the field. Case 10 from Alexander, Pemberton, Kepler and Broders (hematoxylin and eosin x400). Reprinted with permission of the American Journal of Surgery and the authors from Alexander, Pemberton, Kepler and Broders.

FUNCTIONING CANCER OF THE ISLANDS OF LANGERHANS

In 1927, Wilder, Allan, Power and Robertson reported the first clinically, biochemically and pathologically proved case of functioning cancer of the islands of Langerhans in which the patient, a man, 40 years old, had hyperinsulinism and hypoglycemia. The cancer was situated in the tail of the pancreas and had metastasized to the adjacent lymph nodes and liver (figs. 7 and 8). In the metastatic carcinoma of the liver, they were able to extract from one quarter to one half as much insulin as is ordinarily obtained on extracting pancreas. This substance acted like insulin when injected into rabbits.

FUNCTIONING CANCER OF THE OVARY

An outstanding example of functioning cancer of the ovary is the defeminizationing and masculinizationizing tumor first described by Pick in 1905. Pick's tumor was composed, for the most part, of epithelial cells arranged in a tubular manner that differed from any normal ovarian structure but did resemble adenomatous tissue found in connection with the gonads of male pseudohermaphrodites.

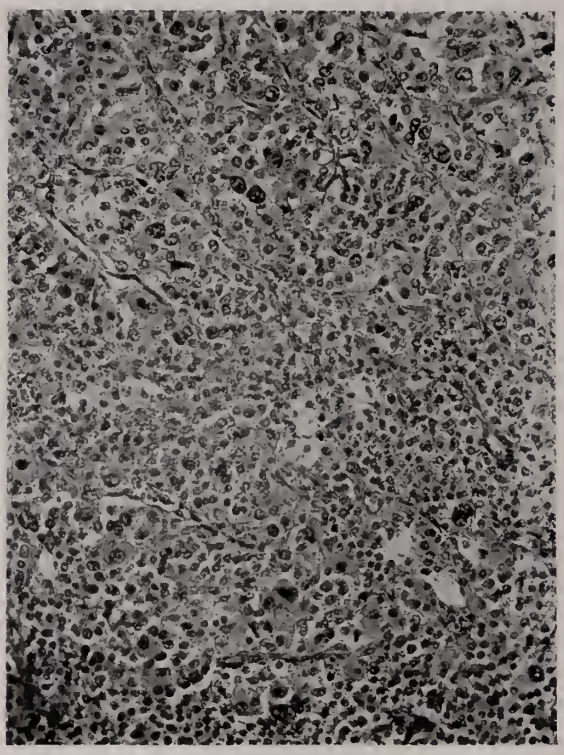

Fig. 6.—Adenocarcinoma, grade 1, of parathyroid gland showing chief and oxyphil cells in irregular arrangement, variously sized and shaped hyperchromatic nuclei and mitosis. Case 5 from Alexander, Pemberton, Kepler and Broders; also previously reported by Brown; (hematoxylin and eosin x180). Reprinted with permission of the American Journal of Surgery and the authors from Alexander, Pemberton, Kepler and Broders.

Pick thought his tumor was akin to an enlarged ovotestis and designated it "testicular tubular adenoma." Similar tumors were reported by Schickele in 1906 and Bell in 1915. Bell thought the tumor arose in an ovotestis. He observed the tubular adenomatous structure described by Pick and, in addition, demonstrated interstitial cells. Bell's report was especially noteworthy from a clinicopathologic standpoint. In addition to a description of the tumor which was situated in the left ovary of a girl, 18 years old, he called attention to a peculiar com-

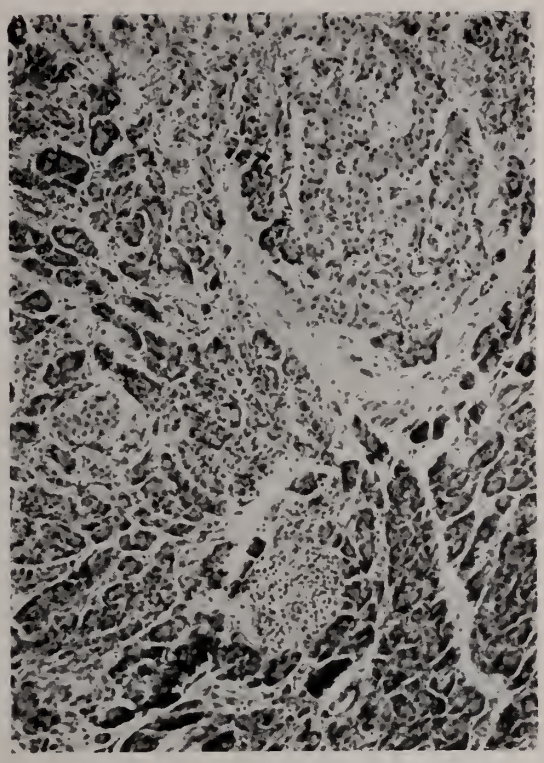

Fig. 7.—Islet-cell carcinoma of the pancreas (hematoxylin and eosin x90). Case reported by Wilder, Allan, Power and Robertson.

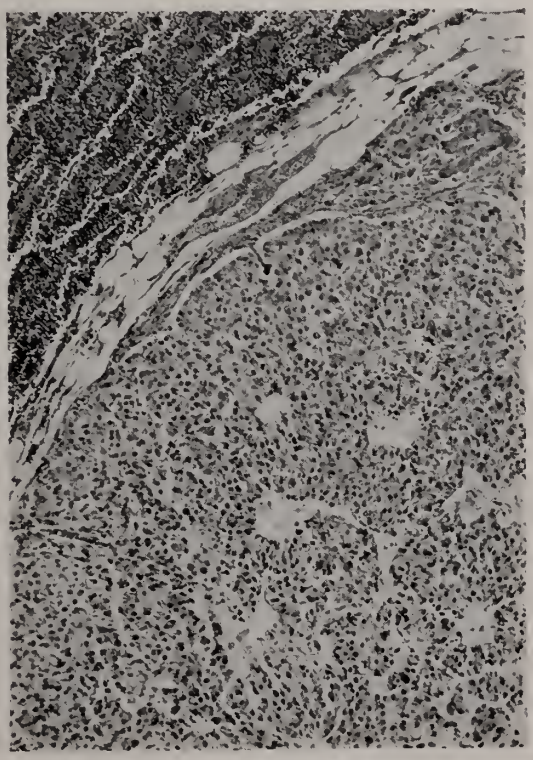

Fig. 8.—Metastatic islet-cell carcinoma of pancreas in regional lymph node; same case as figure 7 (hematoxylin and eosin x65).

plex of symptoms and signs manifested by the patient. This consisted of amenorrhea, hirsutism with masculine distribution of the hair, atrophy of breast and change in voice which disappeared after extirpation of the neoplastic ovary.

Robert Meyer[23] also noted the frequent association of the peculiar symptom complex and designated the tumor "arrhenoblastoma", the name that it goes by today. Meyer maintained that the arrhenoblastoma arises from male-directed undifferentiated germ cells with retained sexual potency situated in the hilum of the ovary that are not utilized during embryonic development. He divided arrhenoblastoma into three forms: (1) adenoma tubulare testiculare ovarii of Pick, (2) atypical, often presenting a sarcoma-like structure with rudimentary cords or irregular tubules and (3) intermediary, where the morphology varies from one form to the other. According to his report of 26 cases in 1931, in the first form the incidence of masculinization of the patient is less as it occurred in only 3 of 9 cases. He had an opportunity to examine 9 of 11 patients who had the second form. In these 9 the lesion was associated with a high degree of masculinization of the patient. In the 6 cases of the third form he noted a slighter degree of masculinization than he did in the others, however, later examination of all 6 patients revealed signs of defeminization and masculinization.

In 1939, Dockerty and MacCarty[11] published a detailed description of 4 cases that they found on re-examination of ovarian tumors in the Mayo Clinic museum. These tumors had been collected from 1910 to 1936 inclusive. Two of the tumors were comparable to those of Meyer's second group and two were comparable to his third group. Dockerty and MacCarty came to the conclusion that the tumors were malignant. Three of the patients had all or at least some of the features of the symptom complex described by Bell and 2 had hypertrophy of the clitoris.

Another functioning cancer of the ovary is the granulosa-cell tumor described more than ninety years ago. However, it did not attract real attention until Robert Meyer[24] published a report of his findings in 1915. According to Meyer, the granulosa-cell tumor assumes a variety of forms, namely: (1) a folliculoma, which often is associated with cysts; (2) solid masses, thin cords or tubules and (3) a diffuse structure resembling sarcoma. Furthermore,

the various forms may be found in the same growth. The lesion in 60 per cent of his cases was found in women past the menopause. He was of the opinion that the granulosa-cell tumor arises from undifferentiated cells in the medullary portion of the ovary and not from epithelial cells of the true follicle. Butterworth's experiments, however, tended to disprove this contention. By the use of roentgen rays, Butterworth was able to produce tumors in mice that were histologically and functionally comparable to granulosa-cell tumors of women. It is evident from the title of his first paper and the fact that about 10 per cent of his patients, according to the 1931 report, died from later metastatic lesions that Meyer considered the granulosa-cell tumor to be of cancerous nature.

In 1939 Dockerty and MacCarty[12] reported their findings in 30 cases in which the tumors were surgically removed at the Mayo Clinic during the period 1905 to 1937 inclusive. Like Meyer's patients, 60 per cent were in the postmenopausal age. In line with other investigators they found that the tumors were characterized by three cell patterns, namely, folliculoid, cylindroid and diffuse, and that two or all three patterns might be represented in the same tumor even in the same microscopic field. Furthermore, they were of the opinion that the tumors appeared to be of a low grade of malignancy.

In 1945, Hodgson, Dockerty and Mussey reported on 62 cases of granulosa-cell tumor from the Mayo Clinic. About 60 per cent of these lesions occurred in women who had passed the menopause. These authors were of the opinion that the tumors appeared to be of a low order of malignancy. They based this opinion on the fact that in 73 per cent of the 62 cases lesions were of grade 1 and in 27 per cent of grade 2 malignancy. In the 62 cases 4 definite recurrences and 1 possible recurrence developed with 3 deaths. All recurrences were in the postmenopausal group of patients.

In 1948, Mussey, Dockerty and Masson reported 2 cases of malignant neoplasms of the uterus that were associated with estrogen-producing ovarian tumors. In 1 case the estrogen-producing ovarian tumor was a granulosa-cell carcinoma that had metastasized to the omentum and was implanted on the posterior surface of the uterus.

In 1944, Kepler, Dockerty and Priestley reported an interesting case of another type of tumor, a masculinizing adrenal-like ovarian tumor, and tabulated pertinent findings in 13 authentic cases that had been reported previously. From a microscopic standpoint, they were of the opinion that the tumor they reported was of a grade 2 malignancy and called attention to death of the patient from metastasis in one of the previously reported cases. Furthermore, they were of the opinion that these adrenal-like tumors from a functioning standpoint are closely related to the adrenocortical carcinomas and that an origin from adrenocortical rests seems more logical than from corpora lutea.

Although functioning teratomas of the ovary, like those of the testis, are not in the strict sense of the word functioning cancers, those with proved functioning malignant epithelial elements should be placed in this category.

FUNCTIONING CANCER OF THE CORTEX OF THE SUPRARENAL GLAND

Functioning cancer of the cortical portion of the suprarenal gland with attendant changes in bodily development and abnormal sex manifestations are well known. In 1905 Bullock and Sequeira collected 12 cases of cancerous tumors of the suprarenal glands of children in which the children showed precocious growth and development of strength, early development of the sex organs and an overgrowth of fat and hair. In 1912 Glynn added 5 cases in children to make a total of 17 reported cases. Fourteen of the patients were females and 3 were males. The 3 males manifested precocious sex development along masculine lines. However, the interesting feature in regard to the 14 female patients was the fact that the precocious sex development was toward the male as attested by the presence of beard, absence of menstruation and in the majority of instances hypertrophy of the clitoris. Whereas the males usually have developed along male lines, in a small minority of cases which have been reported they have developed toward the female type. Glynn also presented 6 cases of cancer of the suprarenal gland in young women who had undergone changes in sex characters toward the male type and 6 other cases of a similar nature in which the sex changes of the patients were less evident.

In 1924, Keyser and Walters reported a most remarkable and unique case of functioning cancer of the suprarenal cortex (fig. 9). The patient was a

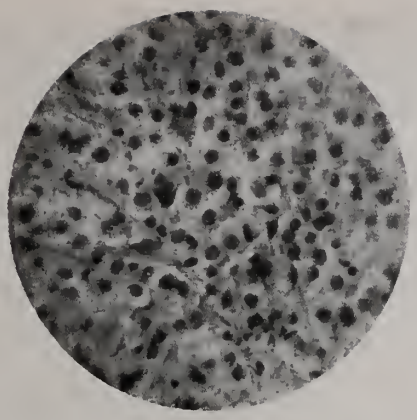

Fig. 9.—Cortical carcinoma of suprarenal gland (hematoxylin and eosin; high power). Reprinted with permission of the Journal of the American Medical Association and the authors from Keyser and Walters.

woman, 38 years old, who was the mother of ten children. The patient manifested an unusual complex of symptoms and signs, namely, enlargement of the thyroid gland which contained an adenoma, nervousness, tremor, tachycardia, hyperhydrosis, intolerance to heat, dyspnea, sensations of choking, precordial pain, a jerking sensation in the heart, increased appetite, increased weight, increased metabolic rate, hypertension, dyscrasia of the skin and pilosebaceous systems, characterized by erythema, acne, comedones, oiliness and hypertrichosis, redness and tenderness of the mucous membranes of the mouth and introitus of the vagina, atrophy of the lingual papillae, weakness, fatigue, slight mental dullness, thinning, stringiness and coarseness of the hair of the scalp, alopecia, amenorrhea, coarseness of voice, hypoglycemia, glycosuria, salty taste in mouth, stomatitis, pain in the back and expectoration of a slight amount of bright blood. The patient was operated on and a rounded, yellowish, nodular and partially necrotic tumor measuring 16 by 10 by 8 cm. which was attached to the left kidney was removed. Within twenty-four hours of the operation the pulse and temperature increased and the patient became drowsy. This condition was accompanied by low indeterminate systolic blood pressure. Despite transfusion of blood the blood pressure continued to be low and the pulse and temperature elevated. Death occurred on the fourth postoperative day. A significant finding at necropsy was a hypoplastic right suprarenal gland. Microscopically the tumor consisted of equally small sized polygonal or round cells that had to some extent a cordon arrangement comparable to the cells of the zona fasciculata of the suprarenal gland. The authors were of the opinion that the dyscrasia of the skin and pilosebaceous systems manifested by erythema, acne, comedones and hypertrichosis, redness of the mucosa, and atrophy of the lingual papillae, weakness, fatigue, alopecia and suppression of menses, the change in voice, the increase in weight, all were suggestive of perverted function of the suprarenal cortex; that the hyperglycemia and glycosuria were difficult to account for and that the death following operation was of a type which was suggestive of insufficiency of the suprarenal medulla, a view which is more or less confirmed by the presence of the small suprarenal gland found at necropsy on the right side.

CHORIOCARCINOMA

In the foregoing discussion, I have been dealing with functioning cancers that, for the most part, resemble and function, especially in a hormonal way, like the parent tissue from which they arise regardless of whether the malignant lesion arose in an undifferentiated remnant or a differentiated rest of a given organ. I am now going to enter on a discussion of a functioning cancer that resembles and functions with regard to the production of hormone like the cells from which it arises. In addition, this functioning cancer has an imitator that resembles it microscopically and functionally in a hormonal way but arises from cells that are in no way related to the parent cells. I have in mind the choriocarcinoma whose parent cells are the epithelial cells of the chorionic villi. The true choriocarcinoma, in my opinion, can arise only where the epithelial cells of the chorionic villi are found regardless of whether they are normally or ectopically situated. In my opinion if it arises from cells other than the epithelial cells of chorionic villi, it is an imitator. By imitator, I am referring to the so-called choriocarcinomas that arise in situations where chorionic villi to my knowledge, have not been found even in females, let alone males, such as the liver, stomach, brain and so forth. These imitators are not infrequently found in the testis where they can arise directly from the epithelial cells of a teratoma, from the epithelial cells of the seminiferous tubules but it is most likely that they result from the transformation of an adenocarcinoma with which they are often associated. I have even seen one of these imi-

tators that arose directly from the regenerative cells of the squamous epithelium of the uterine cervix in a patient who had not been pregnant for twelve and a half years. Those that are primary in the liver could arise directly from the liver cells; however, they most likely result from the transformation of a liver-cell carcinoma. The most remarkable case I have ever heard of is that of a man, 61 years old, in whom a choriocarcinoma arose in association with an adenocarcinoma in the stomach with metastasis to the liver (figs. 10 and 11.) The three physicians

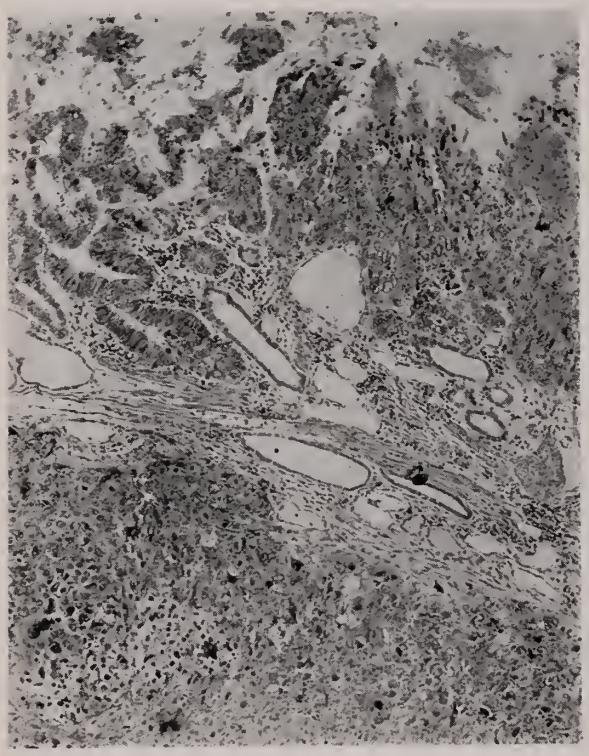

Fig. 10—Primary carcinoma of the stomach that is imitating a choriocarcinoma showing continuity of adenocarcinoma and the imitator (hematoxylin and eosin x75). (Sawyer, Daly and Brock's case.)

to whom this interesting case belongs are Dr. Howard P. Sawyer of Brookfield, New Hampshire and Drs. K. J. Daly and Samuel M. Brooks of Manchester, New Hampshire. I am indebted to these gentlemen for the opportunity to see the sections of stomach and liver and to Dr. Brooks for the short history that was sent to me. I also have Dr. Brooks' permission to call attention to this remarkable case at this time. One of the sections showed the so-called choriocarcinoma, not only continuous with the gastric glands but also directly connected with the adenocarcinoma, while other areas deeper in the section

Fig. 11.—Imitator of choriocarcinoma in liver secondary to carcinoma of stomach; same case as figure 10 (hematoxylin and eosin x60).

showed continuity of the so-called choriocarcinoma and the adenocarcinoma. In this case the so-called choriocarcinoma arose directly by malignant transformation of the gastric glands and by transformation of the adenocarcinoma. This so-called choriocarcinoma proved to be a real imitator of the true choriocarcinoma and results of the Friedman and Aschheim-Zondek tests were positive in this case.

SUMMARY

In this paper I have endeavored to call attention to some of the outstanding examples of functioning cancer and to mention the incontrovertible evidence in support of their functioning attribute. It is probable that future scientific investigation will prove that a large proportion of cancers exhibit at least a little evidence of physiologic attribution in addition to proliferation.

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THE COEXISTENCE OF CANCER AND TUBERCULOSIS OF THE LARYNX—A CASE HISTORY*

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The coexistence of cancer and tuberculosis is so uncommon that Rokitanski believed the two to be antagonistic. With the passage of time the two not only have been reported but occur not uncommonly. However, the coexistence in the same organ, especially in the larynx is uncommon. Hautant[1] reports three cases of laryngeal lesions in which the differential diagnosis between tuberculosis and cancer was a difficult problem but he was unable to find a coexistence of the two diseases. Chabaud[2] reports three cases of cancer of the larynx in which there is associated tuberculosis of the lung. In only one of his cases was there coexistence of tuberculosis and cancer in the larynx. The literature which is available to the authors contains only seven cases with the coexistence of the two. In these cases active pulmonary tuberculosis is an associated disease. Tucker[3] reports one case of chronic hoarseness due to tuberculosis and cancer of the larynx. McKenter[4] reports a similar case also having active pulmonary tuberculosis upon which he performed a laryngectomy. Rossi[5] reports four cases of this combination. Three patients had the usual squamous cell variety but one had the less frequent basal cell type. The results of treatment of this combination of diseases in all seven cases has been poor, none reporting a survival of even six months. We have had under our treatment for one year a patient who had cancer and tuberculosis of the larynx. Fortunately for the patient, he had no active pulmonary tuberculosis and streptomycin was available for treatment. One year following institution of streptomycin therapy accompanied by a total laryngectomy, the patient is still alive and well. A history of this case is as follows:

CASE REPORT

This 59 year old negro carpenter's helper, Reg. #11-320, a veteran of World War I, was admitted to the Veterans Administration Hospital, Richmond, Virginia, on December 29, 1947, with the chief complaint of hoarseness of one month's duration. The present illness began with hoarseness and cough which was productive of a moderate amount of mucoid sputum. After one week the cough improved but the patient noted increasing hoarseness. He was seen by his local medical doctor who prescribed a gargle. The patient did not improve, so he was referred to an Ear, Nose and Throat specialist in Richmond, Virginia, who advised hospitalization to obtain a biopsy of the larynx. The patient refused hospitalization. A week later the patient developed a sensation of obstructed respiration and was admitted to this hospital. There had been no pain, dysphagia, hemoptysis or dyspnea and a weight loss of only four pounds in the past six months. Occupational history reveals that the patient has been a laborer all his life. He smokes approximately one-third pack of cigarettes per day and drinks moderately. His mother and father died of old age and his wife died of pneumonia in 1918. Patient has not remarried and there were no children. In 1932 this patient was operated upon for appendicitis in a Government hospital and was retained in the hospital for three months post-operatively for intravenous therapy. The patient does not know for what disease he was treated. Patient states that he has had chest x-rays on two separate occasions in the past. On both occasions he was called back for repeat films; however, he has had no treatment for any chest condition. The review of the body by systems showed no complaints referable to the cardiovascular, neuromuscular, genito-urinary or gastrointestinal systems.

The physical examination showed a small but well developed and fairly well nourished negro male appearing ten years younger than the stated age of 59. The blood pressure was 110/75, the pulse 83 and respiration 20. There is marked hoarseness but no evidence of respiratory distress or pain. There were no palpable cervical lymph nodes. The eye

*Presented before the Manchester Medical Society, Richmond, Virginia, March 1, 1949.

examination was essentially normal except for bilateral arcus senilis. The ears, nose and the throat were not remarkable. Indirect mirror examination of the larynx showed fixation of the left false cord with edema of the left arytenoid and aryepiglottic fold. The left true cord appeared involved in a destructive neoplastic-appearing process which extended subglotticly and involved almost the entire true cord. The right half of the larynx appeared essentially normal. The chest was emphysematous in type. There were a few crackling rales at both bases which were more marked after coughing. The heart was normal in size, rate and rhythm, with no murmurs. Examination of the abdomen showed a well healed right rectus scar with no masses or tenderness noted. The liver and spleen were not palpable. Examination of the extremities and the rectum were not remarkable.

1a. Before operation.

1b. After operation.

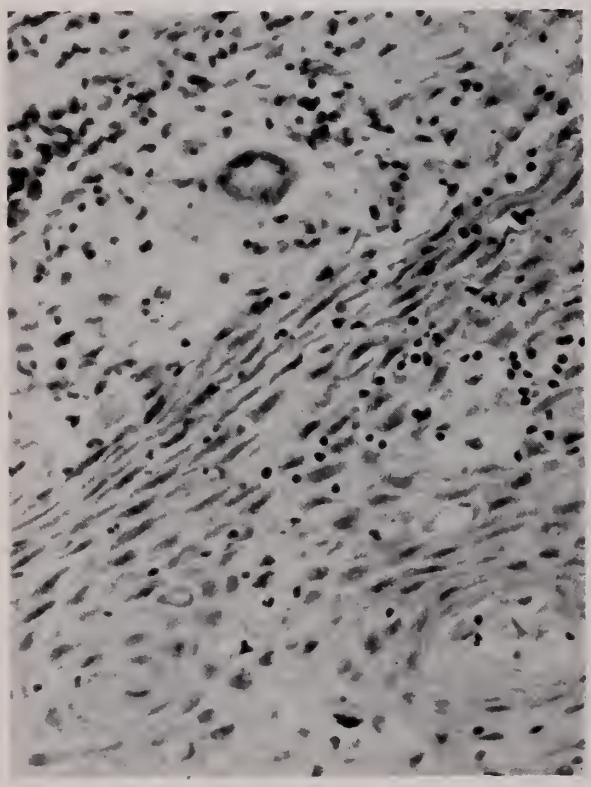
2. Before operation.

Urinalysis performed throughout the hospitalization remained well within normal limits. A complete blood count on admission showed 7,500 white blood cells with 13.6 grams of hemoglobin. The Kahn report was negative. Repeated cultures and smears of the sputum for tuberculosis were negative.

3. Larynx showing the gross lesion.

A culture of the sputum for ordinary organisms showed the presence of staphylococcus aureus and streptococcus pyogenes (beta). The blood urea nitrogen on the same date showed 14 milligrams per cubic centimeter. An audiogram and electrocardiogram

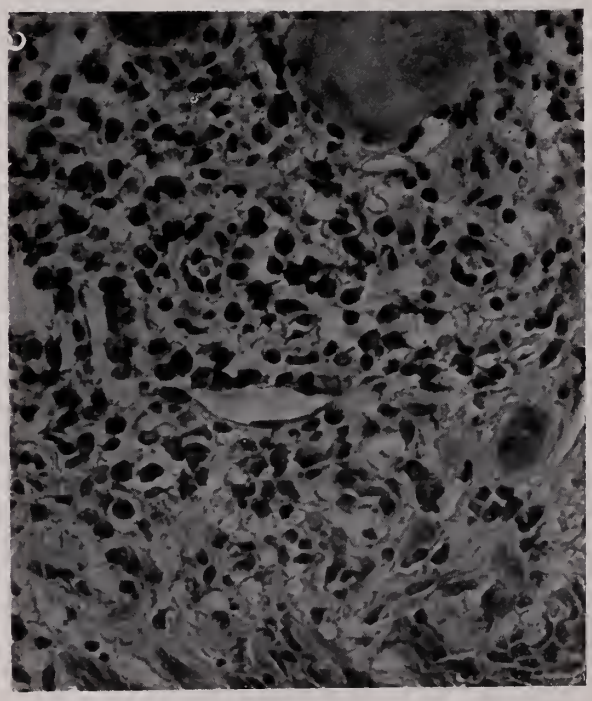
were reported as normal. An x-ray of the chest showed a moderate amount of fibrosis of the right lung and the lower portion of the left lung. We were fortunate in being able to obtain a film from Pine Camp Hospital, Richmond, Virginia, which was



4. Microscopic section of the growth showing a tubercle.

reported as follows: "Examination of the chest made at Pine Camp Hospital in 1943 shows the appearance of the lungs to be unchanged as compared with the film made here on the 2nd of January 1948."

On December 31, 1947, under topical cocaine anesthesia, a laryngoscopy was performed, which revealed an ulcerated mass on the entire surface of the left true cord which was apparently fixed and which involved the ventricle and the subglottic region and extended posteriorly to just across the midline. The pathological examination of the sections taken from the mass on the left false cord showed granulomatous changes. Subsequent examination revealed an apparent increase in the size of the lesion, and on January 5, 1948, another biopsy was taken which showed granulomatous changes consisting of epidermoid cells and giant cells of the Langhans type. In view of the fact that the patient complained of no pain in the larynx and in view of the questionable lesion in the chest, it was considered that the patient not only had a tuberculous involvement of the larynx but also had a malignancy. On January 8, 1948, another more extensive biopsy was taken which showed in addition to the typical appearance of tuberculosis, considerable thickening of the epithelium with kyskeratosis and down-growth of epithelial strands into the stroma which appeared to be of invasive character. A Ziehl-Neelson stain revealed acid-fast bacilli. The patient was presented before the Tumor Board on January 14, 1948, where his case was reviewed. Streptomycin therapy followed by a total laryngectomy was recommended. On January 15, 1948, the patient was begun on a pre-operative course of 0.25 grams of streptomycin twice a day. On the 23rd of January, 1948, under orotracheal nitrous oxide and oxygen and intravenous sodium pentothal anesthesia, a subperichondrial total laryngectomy was performed. Because of sub-



5. Microscopic section of the growth showing carcinoma.

glottic extension, the larynx was amputated below the cricoid cartilage. Upon amputation of the larynx it was noted that there was a cauliflower granulomatous lesion of the posterior and lateral walls of the trachea extending downward for a distance of approxi-

mately 3 centimeters. These lesions were thought to be tuberculous at that time. After the operation, streptomycin was continued and the patient was also given 30,000 units of penicillin every three hours. The patient's post-operative course was essentially uneventful. The temperature post-operatively rose to 102.8, but subsided by lysis so that after the 6th of February there was no fever. The incision healed promptly and on February 27 the skin sutures were removed. The lesions within the trachea could be easily viewed and under the streptomycin therapy slowly but progressively healed. On the 22nd of February the tracheotomy tube was removed. The stoma maintained its patency and within two days following this the lesions of the tracheal wall had completely disappeared. Streptomycin was continued until March 10, 1948. On the 12th of March, 1948, the patient was quite well and he was discharged from the hospital to return to his ordinary work.

Pathological report of the excised larynx was reported as follows: "Sections from the left side of the larynx reveal the epithelial lining to be irregularly thickened with localized areas of acanthosis, hyperkeratosis and dyskeratosis. Strands and sheets of kyskeratotic epithelium are seen growing into the underlying tissue. Epithelial pearls are formed in the deeper layers of the epithelium. The submucosa presents considerable diffuse round cell infiltration as well as typical tubercles composed of giant cells, epithelioid cells and lymphocytes. Sections from the right side of the larynx reveal tubercles in the submucosa as well as acanthosis, dyskeratosis and epithelial pearl formation in the submucosa".

Approximately one year later on December 9, 1948, this patient was readmitted to the hospital where he was treated for pyelitis and urethral stricture. At that time he stated that he was getting along satisfactorily. There was no evidence of metastasis in the neck or recurrence of tuberculosis. X-rays of the chest taken on December 13, 1948, were reported as follows: "Re-examination of the chest in comparison with that done about eleven months ago reveals no significant change. The tracheotomy tube is absent."

SUMMARY AND CONCLUSIONS

1. A lesion of the larynx caused by cancer and tuberculosis is rare. The cases reported in the literature available to the authors revealed a grave prognosis, apparently no case surviving as long as six months.

2. The case reported in this paper had squamous cell carcinoma and tuberculosis of the larynx, without active pulmonary tuberculosis.

3. Streptomycin was used for the treatment of the tuberculosis, and laryngectomy was performed for the removal of the cancer.

4. At the end of one year, this patient is living and well with no evidence of recurrence of either disease.

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PUNCH LIVER BIOPSY

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Punch liver biopsy has been established in recent years as a valuable diagnostic aid in the diseases of the liver. The purpose of this paper is to present our experience with 44 liver biopsies on 31 patients at the University of Virginia Hospital. A brief discussion of the indications, contraindications, and complications of this type of procedure is also presented. No attempt will be made to trace its development as it has been done ably by Hoffbauer, Volwiler, Davis, Tripoli, Topp, and others.[1-6,12,15]

Liver function tests, especially in selected group form, have proved to be quite helpful in establishing the functional efficiency of the liver,[17,19,20] but occasionally they can be misleading.[2,4,5,11,15-17,19,20] Not infrequently they are of little value in establishing an etiologic diagnosis. In view of the lack of specificity of these tests it was seen that a more direct approach to the problem was necessary. To satisfy this need the punch biopsy was developed to obtain liver tissue for microscopic examination. This histologic study of the material thus obtained has been found valuable in establishing the correct diagnosis and the prognosis as well as for selecting and evaluating treatment.[4,9,11,12,15,20] In addition to its value in confirming the clinical diagnosis, often unsuspected causes of hepatomegaly, such as primary carcinoma, metastatic lesions, hemachromatosis, amyloid infiltrations, etc., are discovered.

Punch liver biopsy is a relatively simple and safe procedure[4,5,15,20] that can be performed by the average house officer without difficulty at the bedside with very little discomfort to the patient. It is an inexpensive procedure as compared with laparotomy and peritoneoscopy and is less hazardous than laparotomy in the presence of severe liver disease. The tissue obtained is often considered superior to that obtained by laparotomy or peritoneoscopy,[1] as it is removed from the interior of the liver, while the others obtain a specimen from the liver edge where normally there may be an increase in fibrous tissue. Since peritoneoscopy is rather painful, it is often difficult to induce a patient to have a second or third examination in following the progress of intrahepatic disease.[4,5] In metastatic lesions surgery and peritoneoscopy have some advantage in obtaining more satisfactory biopsies because of direct visualization,[4] but if nodules can be felt, blind needle biopsy usually yields quite satisfactory results.

METHODS

Several types of biopsy needles have been advocated but those in most common use are the Silverman[13] and Roth-Turkel[14] needles. Both of these are quite adequate for obtaining a specimen satisfactory for the histologic study of the cells and architecture of the stroma.[1,5] In this series the Roth-Turkel needle was used, as it gives a little larger sample of tissue.[1,3]

Various techniques have been advocated for punch liver biopsies, but most writers employ either the subcostal or intercostal approach. The former is used for palpable livers, while the latter can be used in both large and small livers. In this series the subcostal approach was the chief method used as it was considered safer. The intercostal approach requires more skill, more cooperation on the part of the patient, and the chances of complications, particularly hemorrhage, are greater.[15]

In preparation for biopsy the patient should be questioned for any abnormal bleeding tendency, and the prothrombin time should be determined. This latter should not be more than six seconds above the control. As a precaution a few hours before the procedure an ampule of vitamin K is administered. If necessary, to allay any anxiety, 100 mg. of demerol or any sedative is given a few minutes prior to the needling. Usually the supine position is used but the method advocated by Popper *et al.*[19] in which the patient is placed in the left lateral decubitus position with a pillow under

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the left flank, which causes the displacement of all viscera and ascitic fluid, is quite good. The skin of the area chosen is prepared in the usual manner with iodine and alcohol. The site is then infiltrated with one or two per cent procaine and the infiltration is carried down to include the liver capsule.

In the subcostal approach the liver is entered through the abdominal wall below the costal margin. The usual site is the midclavicular line just below the rib margin although any point between the xyphoid and the right flank is satisfactory. The skin is nicked with a sharp scalpel blade to allow easy penetration of the needle. The Ruth-Turkel needle (Fig. I) with stylet in place is inserted

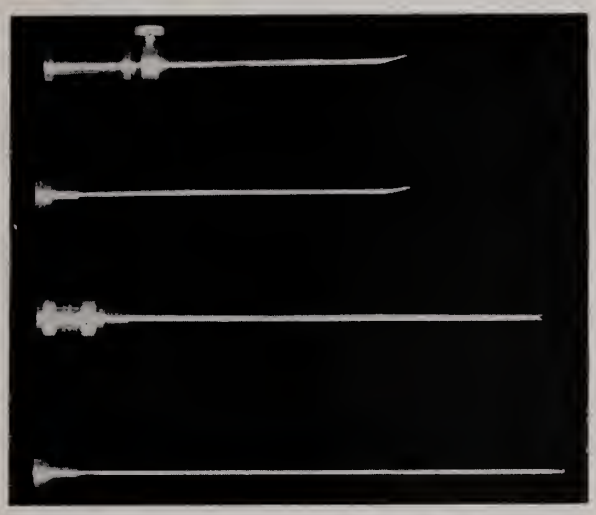

Fig. I. Roth-Turkel needle. Top to bottom: outer needle, stylet, serrated biopsy needle, and plunger.

down into the liver in a cephalid direction to avoid penetration through a thin liver edge. The stylet is withdrawn and the serrated biopsy needle is advanced into the liver through the outer needle to a depth of about four cms. with a rotating motion. Then with gentle syringe suction both needles are quickly withdrawn. The specimen is removed by aspiration of saline into the syringe or by use of the needle plunger and placed in a fixing solution. A specimen about 2 mm. by 2-3 cm. is usually obtained but if it is not adequate a second attempt can be made while the patient is still prepared. Although not essential, it is helpful to have the patient hyperventilate for a brief period, then hold his breath while the whole procedure is quickly accomplished.

The intercostal approach technique for non-palpable livers is as follows. A site is selected in the anterior axillary line in the first or second interspace below the top level of liver dullness. It is better to risk going a little too high than too low, for less harm results from puncture of a thin edge of lung than from damage to the organs below the liver. In using this method, it is absolutely necessary that the patient hold his breath to prevent the possible hazard of a linear tear while the needle is held rigidly between the ribs. The needle is advanced transpleurally into the liver and the specimen is obtained in the manner described for the subcostal route. The whole transaction should be accomplished in about ten seconds. It is stressed that this method is reserved only for those livers which cannot be felt and the obtainment of liver tissue is considered of vital importance.

Following the biopsy the patients are instructed to remain absolutely quiet in bed for two to three hours, after which activity is limited for twenty-four hours. However, if there are any signs suggestive of bleeding, they are kept quiet for twenty-four hours.

INDICATIONS FOR LIVER BIOPSY

Liver biopsy is indicated when a study of the histopathology of a sample of liver tissue would be of value in making or confirming a diagnosis of hepatic disease. Specifically it is of value in the following conditions:[1-6,8,11,12,15,17,19,20]

1. In cases of jaundice where the diagnosis is uncertain between obstructive or intrahepatic jaundice.
2. In cases of hepatomegaly of questionable etiology.
3. In cases suspected of diffuse parenchymal liver disease e.g. cirrhosis, infectious or toxic hepatitis hemachromatosis, leukemia, Hodgkin's disease, lymphosarcoma, amyloid infiltration, sarcoid, syphilis, liver damage secondary to malnutrition, and in certain cases of diabetes and hyperthyroidism.
4. In cases suspected of localized or patchy pathological processes, e.g., primary or metastatic carcinoma, tuberculosis, bilharziasis, congenital cystic disease, kala-azar, etc.

In addition to its diagnostic value, repeated biopsies are helpful in determining the prognosis, and in appraising the results of a therapeutic program in such conditions as hepatitis, cirrhosis, and

malnutrition. Occasionally the question of an elective operation arises in a patient with chronic liver disease, and knowledge of the exact state of the liver is quite helpful in determining the operative risk.[4] In recent years trocar biopsy has played an important part in the correlation of liver function tests with the histologic appearance in the living state.[3,7,15,17,19,20]

CONTRAINDICATIONS

If there is any significant bleeding tendency or hypothrombinemia, punch liver biopsy should be avoided. It is felt that the prothrombin time should be normal or only slightly prolonged, but, as Volwiler and Jones have pointed out, if the prothrombin time is elevated and the biopsy is imperative, a fresh transfusion can be given and the procedure done.[4] Because of the potential danger of a linear tear in using the intercostal approach, biopsies are not done in this institution on non-palpable livers unless it is absolutely necessary. Although biopsy is not contraindicated in chronic passive congestion of the liver, it is felt that it best not be done unless some additional pathology is suspected. In disease such as cholangitis, in which intrahepatic suppuration is suspected, needle biopsy is, of course, hazardous and should not be attempted.[3] Finally, if systemic hypertension of a marked degree is present the procedure is contraindicated.

COMPLICATIONS

The only significant danger following liver biopsy is massive hemorrhage.[1-6,10,12,15] Fear of this should not deter one from the undertaking if adequate surgical and transfusion facilities are available. Pain, lasting from a few hours to a day after the needling, occurs in about five per cent.[3] Other quite rare complications are damage to neighboring organs, implantation of tumor cells along the needle tract (which is more of a theoretical hazard

TABLE I. CORRELATION OF THE CLINICAL AND PATHOLOGICAL DATA AND OTHER PERTINENT POINTS OF THIS SERIES OF LIVER BIOPSIES

Pt.	Inter-costal	Sub-costal	No.	Satis-factory	Clinical Diagnosis	Pathological Diagnosis	Complications
1.		*	2	2	Biliary cirrhosis	Biliary cirrhosis	None
2.		*	2	0	Cirrhosis	Unsatisfactory	None
3.		*	1	0	Cirrhosis	Unsatisfactory	None
4.		*	1	1	Hepatomegaly	Fibromyxosarcoma	None
5.		*	1	1	Metastatic Carcinoma	Metastatic Carcinoma	None
6.		*	1	1	Hepatomegaly	Fibrosarcoma	None
7.		*	3	1	Carcinoma of pancreas	Hodgkin's disease	None
8.		*	1	1	Carcinoma of pancreas	Hepatitis	None
9.		*	1	1	Cirrhosis of liver	Precirrhotic fatty liver	None
10.		*	1	1	Metastatic carcinoma	Metastatic carcinoma	None
11.		*	1	1	Metastatic carcinoma	Liver with focal necrosis: etio?	None
12.		*	2	2	Hepatitis	Hepatitis	None
13.		*	1	1	Metastatic carcinoma	Normal liver	Slight pain
14.		*	2	2	Hepatomegaly	Normal liver	None
15.		*	2	2	Carcinoma, metastasis to liver	Normal liver	None (Autopsy: metastatic pancreatic carcinoma)
16.		*	1	1	Obstructive jaundice	Normal liver	None
17.	*	*	2	2	Hepatomegaly	Lymphatic infiltration	Pneumothorax, spontaneous
18.		*	1	1	Alcoholic cirrhosis	Cirrhosis in fatty stage	Slight pain
19.		*	1	1	Homologous serum jaundice	Hepatitis	None
20.		*	3	2	Obstructive jaundice ?	Normal liver	None
21.	*		1	1	Early cirrhosis ?	Normal liver	None
22.	*		2	1	Hepatomegaly	Nodular cirrhosis	None
23.	*	*	2	1	Alcoholic cirrhosis	Cirrhosis	Slight bleeding
24.	*		1	1	Hodgkin's of liver ?	Normal liver	None
25.	*		1	1	Miliary tuberculosis	Miliary tuberculosis	None
26.		*	1	1	Liver metastasis ?	Metastatic carcinoma	None
27.		*	1	1	Alcoholic cirrhosis	Cirrhosis with fatty infiltration	None
28.		*	2	1	Carcinoma, primary of the liver	Metastatic carcinoma	None
29.		*	1	1	Metastatic carcinoma	Normal liver	None (Autopsy: metastatic carcinoma
30.		*	1	1	Hepatomegaly	Fatty degeneration of liver	None
31.		*	1	1	Hepatomegaly	Precirrhotic fatty liver	None

than a real one), bile peritonitis, and infection.[1,3]

From 1939 through 1947 the mortality rate of punch needle biopsy by all methods (including moribund cases) has been under 0.3 per cent.[12] Recently Topp, Lindert, and Murphy, using the subcostal route have reported 350 biopsies without mortality or serious complications.[5]

DISCUSSION

In this small series of 31 cases, 44 biopsies were done for diagnostic, prognostic, and therapeutic purposes (Table I). The subcostal approach was used in all but five biopsies and in these the intercostal route was required. Three of the biopsies were done on patients who were out-patients. The procedure was performed at the bedside without difficulty by relatively inexperienced physicians with very little discomfort to the patients. In 29 of the 31 cases adequate tissue samples were procured and 36 of the 44 specimens obtained (82 per cent) were satisfactory for histologic examination. The clinical impression was confirmed in 48 per cent of the cases but the biopsy was necessary for the correct diagnosis in 35 per cent.

There were 18 per cent failures, which were attributed largely to the inexperience of the operators and to small livers. In seven per cent of the successful biopsies, histologic study was of no help in making the diagnosis.

The only serious complication encountered was the development of a pneumothorax following an intercostal biopsy. However, the patient recovered spontaneously without difficulty. In one case there was evidence of slight intraperitoneal bleeding and two patients complained of slight to moderate pain for a brief period.

It was found that this diagnostic aid was most reliable in diffuse liver disease as the sample was representative of the entire liver. Probably the most practical value was in differentiating intrahepatic from obstructive jaundice. This was particularly important, for it is well known that patients with intrahepatic jaundice tolerate surgery rather poorly. Many times unsuspected pathology was discovered and the diagnosis could not have been made definitely without biopsy. Three cases of malignancy were not suspected clinically. One case suspected of miliary tuberculosis was confirmed by this method and punch liver biopsy is offered as a practical way of establishing the diagnosis. In estimating the prognosis and recommending therapy in such disorders as hepatitis and cirrhosis, information obtained from the microscopic appearance was of value. This was notably so in cirrhosis in determining whether the fatty infiltration or the fibrotic stage was present.

Our experience with this series of liver biopsies is in agreement with Topp, Volwiler, Davis, Hoffbauer, and others;[1-5,20] that is, this is a safe and reliable procedure which causes little discomfort to the patients. It can usually be accomplished with relatively little experience on the part of the operator. The liver should be palpable and the subcostal approach is the method recommended.

SUMMARY

A series of 31 cases on which 44 biopsies were done for the purpose of diagnosis, prognosis, and selection of treatment has been presented. Successful results were obtained in 82 per cent. The indications, technique, and dangers are discussed. Liver biopsy is accomplished easily, causes little discomfort to the patient, is safe, and is valuable in obtaining an accurate knowledge of the state of the liver. It is of particular value in differentiating intrahepatic from obstructive jaundice.

ACKNOWLEDGMENT

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Find Rice Diet Fails to Reduce Blood Pressure.

The rice diet did not effect any significant reduction in blood pressure during a trial on 12 patients, according to a report by Drs. Herbert Chasis, William Goldring, Ernest S. Breed, George E. Schreiner and Alfred A. Bolomey, of the New York University College of Medicine. Their report appears in the March 11 Journal of the American Medical Association.

Twelve patients with essential hypertension (high blood pressure of unknown cause) were selected from the Hypertension and Nephritis Clinic of the New York University Clinic and from the Third Medical Division of Bellevue Hospital, the doctors say.

These patients were maintained on a balanced diet for 14 to 79 days to stabilize their blood pressures. They were then placed on the rice diet for 14 to 98 days. Observations of four patients were continued during a second period on the balanced diet after discontinuance of the rice diet.

"The changes in blood pressure observed in these patients did not exceed the random, spontaneous variations to be anticipated from the control data on these patients and from the variations in pressure observed in other patients kept in the hospital under similar conditions without restriction of diet," the doctors point out.

During the latter part of the rice diet period, five patients were given daily doses of sodium chloride (ordinary table salt).

"A prompt and significant increase in pressures occurred in four of the five patients. Although the cause for this rise in blood pressure is unknown, the phenomenon suggests that salt restriction may be more important than dietary restriction in effecting such reductions in blood pressure as have been reported by others on the low salt, rice diet."

SUCCESSFUL FEMORAL ARTERY EMBOLECTOMY SEVENTEEN DAYS AFTER ACUTE CORONARY OCCLUSION

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Successful femoral embolectomy in itself is by no means rare as this is the site of one-half of the reported cases.[11] Instances of the successful removal of large emboli are not numerous, particularly following coronary occlusion. Only one other report has been found in the literature, that of Ravdin and Wood.[12] The authors believe it worthwhile to briefly review associated literature and report a case.

Etiological precursors to peripheral embolism are: coronary thrombosis with infarction, rheumatic endocarditis, operative trauma, auricular fibrillation, bacterial endocarditis, atheromatous aortic placques, paradoxical emboli, changes in the clotting mechanism due to digitalis therapy, and changes in cardiac rhythm.[8]

Emboli, almost without fail, lodge at the site of important arterial bifurcations. In two-thirds of the cases the typical embolic picture is sudden localized pain followed in a few hours by a diffuse type of aching pain throughout the areas distal to the obstruction. The limb is pulseless and cold with pallor and blanching occurring early. In the other one-third of the cases, as in Ravdin's and Wood's,[12] the onset is characterized by paresthesia, followed by numbness, diffuse pain and paralysis. They also have the early symptoms of pallor, blanching, pulselessness and lowering of temperature.

In a study of one hundred and thirty-three cases of coronary occlusion and infarction by postmortem examination by Garvin,[3] it was found that two-thirds of these patients had mural thrombi over the infarcted area. When more than one infarction had occurred the incidence of mural thrombi found was greater by approximately twenty per cent. This type of heart disease is the kind most frequently associated with mural thrombi. Forty-five per cent of the cases of myocardial infarction studied by Hollerstein and Martin[5] had thromboembolic lesions. Conner and Holt,[2] in reviewing two hundred and eighty-seven cases of coronary occlusion, noted that seventeen per cent had an embolism. In Blummer's[1] series of cases of myocardial infarction fourteen per cent developed emboli. Mural thrombi were twice as common in the left ventricle as they were in the right ventricle. Garvin[3] found this to be true and stated it was due to the predominance of infarction in the wall of the left ventricle.

Woods and Barnes[15] found the immediate mortality rate in patients with coronary occlusion to be approximately twice as high in patients after sixty years of age as compared to those less than sixty. This accounts for the fact that the prognosis of patients' embolic phenomena is worse following coronary occlusion and hypertension than in patients with rheumatic heart disease. Blummer,[1] in a review of the literature, found the incidence of embolism to different sites to be in the following order of frequency: lung, brain, kidney, spleen, extremity vessels, aorta, and mesenteric vessels. Sixty per cent of his cases which developed emboli did so within the first ten days following coronary occlusion, while the remaining forty per cent between the eleventh and thirty-eighth day. Solandt, Nassim, and Best[14] stated that over ten per cent of the deaths from coronary thrombosis are caused by embolic sequelae to mural thrombi formation.

On experiments in dogs they showed that heparin prevented the formation of mural thrombi over an area of injured cardiac muscle. According to Hermann, Willis, McKinley and Karatkin[6] serious complications of acute arterial obstruction may frequently be prevented by prompt use of antispasmodics alone, or with anticoagulants, and passive vascular exercise. Heparinization, to be most effective, must be instituted before the secondary thrombosis occurs.

Of literature reviewed,[6,10,11] embolectomy was most successful when performed within the first six hours, and at the latest, twenty-four hours after the embolic accident. However, Gillespie[4] reported a case of brachial artery occlusion successfully treated by em-

bolectomy thirty-six hours after onset of symptoms. Murray[9] and Pennoyer[11] observed that patients who were ordinarily bad operative risks—those with coronary thrombosis, heart failure, etc.—withstood the operation well because it could be performed under local anesthesia.

Treatment of peripheral embolism varies greatly. The very conservative believe in only anticoagulant and antispasmodic therapy. Some believe in using surgery along with the other two, while others use only anticoagulant therapy and surgery. It is generally agreed,[11,13,7] that successful embolectomy provides for complete freedom from all sequelae of the arterial occlusion while conservative therapy without surgery may not. This is especially true in regard to the lower extremities. In many cases conservative treatment may be adequate depending on the response to relief of vasospasm and anticoagulants. This latter course may result in residual symptoms, such as intermittent claudication, cold sensitivity, and ischemic paralyses. Shumacker[13] and Pennoyer[11] have found that patients with advanced peripheral arteriosclerosis, due to the poor collateral circulation, tend to develop thrombosis early, thereby making surgery in this group not recommended. Heat should never be used and cold is not much better. Wrapping the limb in sheet wadding and keeping it at a temperature of 75°-80° F. seem to give best results prior to surgery.[11]

CASE REPORT

Mr. A. S. H. 63 year old white male, was admitted to the Mary Washington Hospital on December 23, 1947, complaining of acute substernal pain which radiated down the inner aspect of the left arm to the elbow. His physician, Dr. B., had given him morphine sulfate gr. ½ and atropine gr. 1/75 prior to admission.

For approximately two years previously this man had had episodes of substernal pain and had been under medical care.

On admission his temperature was 99.6, pulse 110, and the blood pressure 100/60. He did not appear in any apparent distress although his skin was pale and slightly clammy. The heart rate was rapid, regular, but of poor quality. No murmurs, thrills, or friction rubs were heard. The remainder of the physical examination was essentially negative.

Laboratory work: W. B. C., 10,900, PMN 68, L. 32, Hb. 17 gm. Sedimentation rate 22 mm. 1st hour. Urine—one plus albumin. EKG.—auricular rate 105, ventricular rate 105. Sinus rhythm. P-R interval 0.16. QRS interval 0.08. Low voltage. Slight elevation of ST 2 and 3. T, 1 and 4 and V, 2, 3, 4, 5, and 6 inverted. Relatively deep Q waves in 2, 3, and V posterior.

The diagnosis of acute coronary occlusion was made and the patient treated accordingly. Dicumerol therapy was instituted, and the prothrombin time maintained at 40-45 seconds for eight days.

The patient appeared to respond well to therapy until January 10, 1948, seventeen days after admission. At 8:30 P.M. he complained of severe pain in the right leg. On examination the leg was found to be pulseless, cool, and mottled in appearance from the mid thigh to the toes. His temperature was 101.8 (R), pulse 120. It was thought that the man had a femoral embolus at the bifurcation of the profunda.

He was given 10 mgm. heparin in 500 cc. saline and 200 mg. of dicumerol. Four hours after onset of the complication he was taken to the operating room.

The patient was prepared and draped in the usual manner. Under local anesthesia a longitudinal incision was made in Scarpa's triangle and the origin of the profunda femoris artery was exposed widely.

A slight firm bulge with pulsation above was noted in the artery. Distal to the thrombus the artery was very spastic and pulseless. The wound was flooded with two per cent sodium citrate solution. Rubber bands were placed above and below the site of embolism and traction applied to control bleeding. A longitudinal incision about 1.5 cm. long was made in the artery over the lower site of the embolus. The embolus, in state of gray hepatization, was extruded by gentle pressure aided with forceps. Suction was then applied by means of a small catheter with the end cut off. Pressure on the artery above the incision was momentarily released, allowing the blood to spurt to wash out particles of clot. The artery was then closed with a single row of interrupted fine oiled silk sutures.

Following closure of the wound a lumbar sympathetic novocain injection was done.

The patient stood the procedure well. On return to his room he was kept quiet and the affected leg immobilized in woolen wadding.

Post-operatively he was placed on spasmalgin, one ampule every four hours. Dicumerol and peni-

cillin therapy were maintained until January 28, 1948, eighteen days post-operatively. He was discharged from the hospital on February 23, 1948.

Fifteen months after embolectomy this sixty-four year old man is now able to work all day as a real estate salesman. He lives in the country and drives himself to and from work.

On examination the right foot and leg is cooler to touch than the left. A trophic ulcer over the lateral malleolus which developed after his operation has finally healed completely. There is no swelling of the extremity and the color is normal. The dorsalis pedis and popliteal pulsations in the right foot and leg cannot be felt. They are, however, difficult to elicit in the left leg and foot because of marked arteriosclerosis. This man walks well both up hill and on the level with no intermittent claudication. He states that he feels better now than he did for two years prior to the coronary thrombosis. He no longer has angina on effort and no evidence of cardiac failure.

SUMMARY

A short review of the literature and a case report of femoral artery embolism following coronary occlusion successfully treated with anticoagulants and surgery is given. This case is unusual in the literature in that only one other similar case has been reported.[12]

Success in these cases depends on early operation. The location of the arterial occlusion is vital in the diagnosis and treatment. No special equipment in the operating room is required for this type of vascular surgery.

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KERATOSIS FOLLICULARIS OR DARIER'S DISEASE: REPORT OF A FAMILY*

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In 1890, White[1] reported a mother and daughter with keratosis follicularis or Darier's disease. Pohlmann[2] and Trimble[3] each reported a family in which five members from three generations were affected. Cockayne[4a] states that the disease usually involves only two generations, but mentions records of families wherein 3, 4 and 5 generations were involved.

Hitch, Callaway and Moseley[5] in 1941 studied a family in which 14 members were affected, with six living patients. There were 52 members in six generations of the family. Forty per cent of 25 females were affected, whereas only 5 per cent of 27 males were involved. It was found that as a group 27 per cent of the blood kin inherited the abnormality.

According to Cockayne[4b], the condition has been encountered in Anglo-Saxons, Latins, Slavs, Jews, and Japanese; the incidence with regard to sex has been equal; and the ratio of affected to normal has been that occurring in the case of a simple dominant characteristic.

Many other familial cases of the condition have been reported in the literature; Hitch, Callaway, and Moseley[5] give an excellent bibliography of these. Of the ten cases reported by Peck[6] there were two mothers, each with a daughter affected.

REPORT OF CASES

Case 1.—W. S., 22 year old white soldier (Figure 1, III—2), stated that since the age of ten he had had an eruption over his trunk, neck, and extremities. This condition was very mild during the winter months, but every summer became much worse, generalized, and pruritic. For several weeks prior to admission to the hospital, the patient had noticed a progression of his eruption.

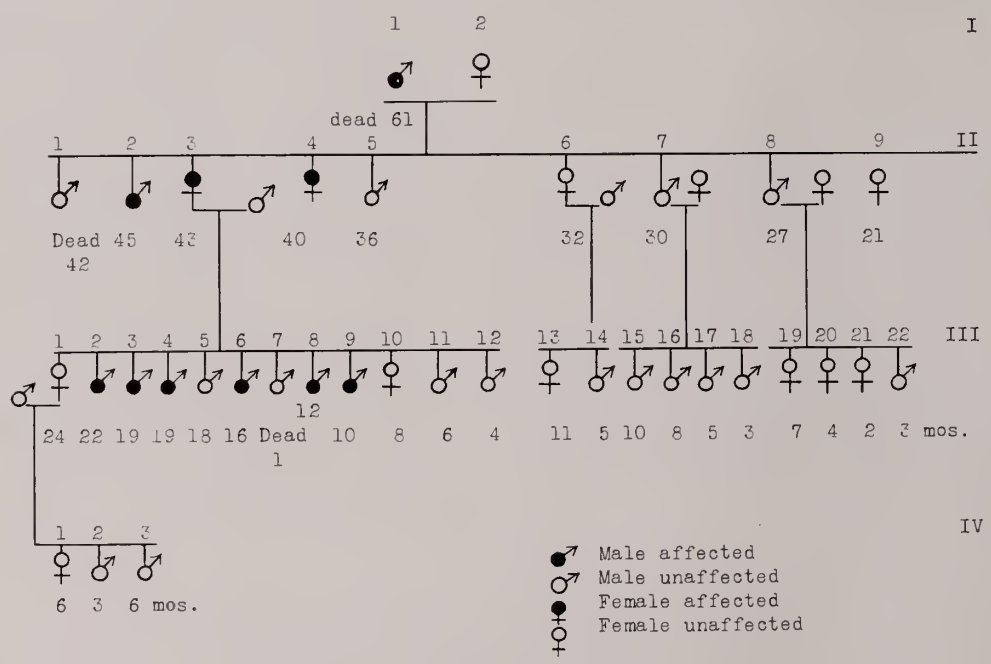

Fig. 1. Heredity chart of the family showing the four generations studied

Figure 1 shows the other members of the family who were affected.

The temperature was 103° F. on admission. There

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was a crusted papulopustular eruption (Figures 2 and 3) over the lateral surfaces of the upper arms and the lower legs. In addition, a diffuse eruption involving the scalp, the neck, the upper trunk, the

Fig. 2. Case 1

peri-umbilical area, the pubic region, and the thighs was seen, consisting of small firm, brown, follicular papules which were coalescent in many areas. There was no alopecia. There was a fetid odor present. The dorsum of both hands and feet presented at a distance a velvet appearance but on closer examination was seen to consist of thickened skin involved

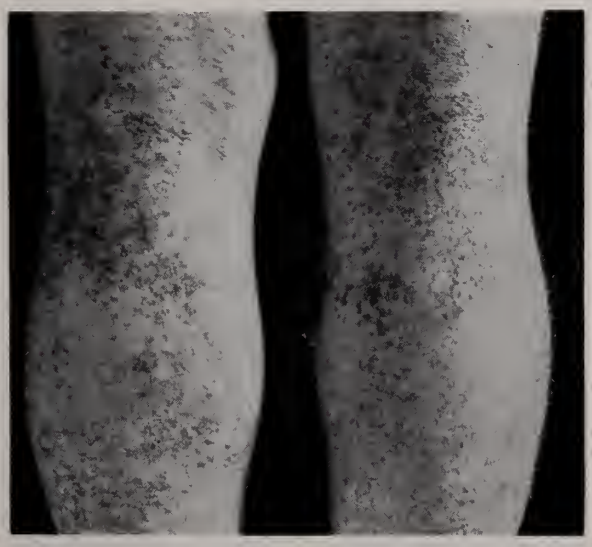

Fig. 3. The posterior aspects of the legs of Case 1

in a coalescent papular eruption. The nails were normal.

Histologic examination of the skin (Figure 4) from the back showed moderate acanthosis and hyperkeratosis of the epidermis with numerous invaginations. At the dermo-epidermal junction there were numerous intra-epidermal cleft-like spaces or lacunae with multiple finger-like processes, lined with nuclei in palisade arrangement. There were large "horny plugs" filling the invaginations of the epidermis overlying the lacunae. Typical "corps ronds" and "grains" were present. The corium was involved with a lymphocytic infiltrate in its upper one-third. Follicles were not seen in many of the areas of involvement.

The urine was normal. The red blood cell count was 4,500,000 and the hemoglobin was 15.1 gms.

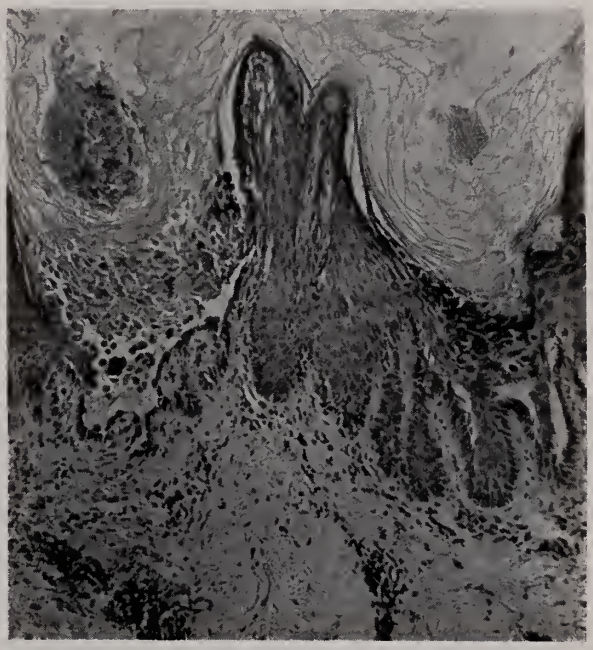

Fig. 4. Biopsy specimen from Case 1 shows the typical changes of keratosis follicularis

The white blood cell count was 11,800; the differential count was normal. The blood Wassermann and Kahn were negative. The total blood cholesterol was 217 mgs. with 40 mgs. of free cholesterol. The basal metabolic rate was plus 15. The carotene level of the serum was 173 I.U., the vitamin A level being 167 I.U. A chest plate was normal.

On admission the patient was placed on aqueous penicillin 50,000 units every three hours and warm boric acid compresses were used. The patient's temperature was normal 24 hours later.

Vitamin A therapy 100,000 units per day in two doses of 50,000 units each was instituted on October 2, 1948. Four weeks after this therapy was begun, there was definite improvement in the dermatitis manifested by the disappearance of many of the papules over the shoulders and the anterior chest. The weather became slightly cooler at this time. No local medication was used other than boric acid compresses the first four days after admission. The vitamin A therapy was discontinued at the end of two months as no further improvement occurred.

Case 2.—C. S., 16 year old brother of Case No. 1, (Figure 1, III—6), has been affected with a similar eruption since the age of 8 years. His skin condition cleared during the winter months but became worse during the summer months. This patient had never been treated. Several years prior to admission to the hospital the patient had noticed gradually decreasing vision in the right eye, not related to darkness.

The patient was a small, thin boy with a generalized dermatitis (Figures 5 and 6) identical with that of his brother, *Case 1*, except that there was no involvement of the groin area and there was little evidence of secondary infection. A fetid odor was present. The vision was 20/200 in the right eye and 20/20 in the left. The right optic disc showed a temporal area of atrophy; the right macular area was involved with a neuro-retinitis of several years duration. Dark adaptation studies were not done.

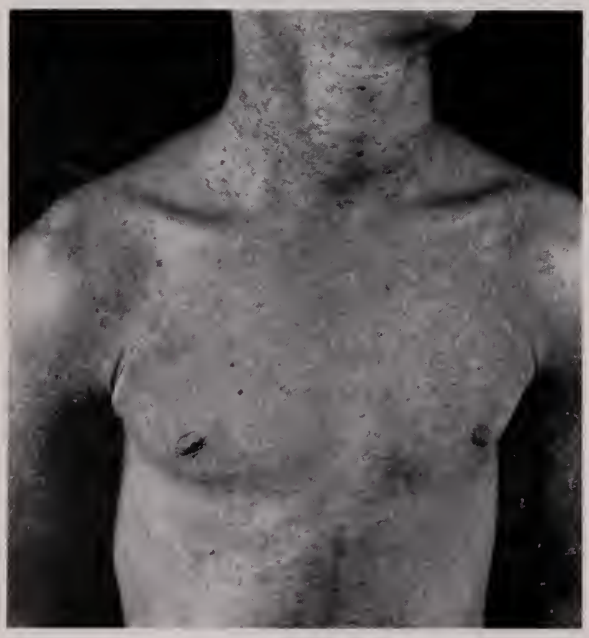

Fig. 5. Case 2

Fig. 6. Case 2 showing a close-up of the lesions on the legs

Pathological examination of tissue from the back showed typical changes of keratosis follicularis.

The red cell count was 4,500,000; the hemoglobin was 14.6 grams; the white cell count was 10,000; the differential was 27 neutrophiles, 62 lymphocytes, 4 monocytes and 7 eosinophiles. The urine was normal. The blood Wasserman and Kahn reactions were negative. The total protein was 6.8 gms. per cent with serum albumin 3.9 gms. and serum globulin 2.9 gms. The basal metabolic rate was minus 5. Vitamin A serum level was 237 I.U and the carotene was 426.6 I.U. The chest plate was normal.

Vitamin A therapy 50,000 units twice daily was instituted on October 2, 1948. Six weeks later there was a slight improvement.

The remaining six cases were not studied in detail by us and are presented in Table I:

COMMENT

The first generation patient was of Anglo-Saxon descent. There was no history of intermarriage. Most of the patients involved were of a small stature. The socio-economic level of the majority was very low; the males were employed as laborers. Only one member of the family had completed a high school

education; however, there was no evidence of gross mental deficiency.

Evaluation of the diet of this family as a group led to the conclusion that the dietary intake was definitely below average with regard to protein and fresh vegetables.

no offsprings.

The average age of onset was ten years; this is contrary to the status of the family reported by Hitch, Callaway and Moseley[5] in which the disease was present at birth. All the affected individuals had involvement of the scalp; only one had involvement of the palms and soles. No abnormalities were noted in the fingernails of these patients; Hitch, Callaway, and Moseley[5] found leukonychia and splitting of the nails in their patients.

TABLE I

CASE	AGE OF ONSET	CLINICAL APPEARANCE	BLOOD LEVELS		REMARKS
			VITAMIN A	CAROTENE	
3. M.S., 43 yrs., (Fig. 1, II-3) Mother of cases 1, 2, 6, 7, 8	14	Generalized	289 I.U.	523 I.U.	Had responded to Vitamin A therapy 5 yrs. previously; obesity and hypertension present.
4. W.P., 45 yrs., brother of cases 3 and 5 (Fig. 1, II-2)	10	Few small areas of typical lesions on chest and lower legs	227 I.U.	438 I.U.	
5. L.P., 40 yrs., single female (Fig. 1, II-4)	14	Generalized	256 I.U.	319 I.U.	Frequent hospitalizations. Vitamin A therapy had been given 2 months previously with slight improvement.
6. N.S., 19 yrs., male, one of identical twins (Fig. 1, III-3)	9	Generalized and severe with palm and sole involvement.	253 I.U.	253 I.U.	Twin was similarly affected but not examined by us.
7. G.S., 12 yrs., male (Fig. 1, III-8)	8	Generalized, severe	189 I.U.	426 I.U.	
8. J.S., 10 yrs., male (Fig. 1, III-9)	10	Generalized	147 I.U.	516 I.U.	

Table I—Cases 3 to 8 inclusive.

DISCUSSION

There were 35 members of this family, ten of whom were affected with keratosis follicularis. Our search of the literature indicates that this family contains the largest number of affected living relatives yet reported, nine affected individuals having been investigated; twenty per cent were females; 80 per cent were males. However, there were 24 males in the family (33.3 per cent incidence) as compared to only 11 females (18.1 per cent incidence). Comparing group incidence with Hitch, Callaway, and Moseley's[5] report of 27 per cent, 28.5 per cent of blood kin in this family inherited the disease.

The criteria for dominant inheritance are fulfilled in that each involved individual has an affected parent and that 50 per cent of the siblings of an affected female of Generation II are affected. The other affected members of Generation II have

Peck[6] suggested that the condition represented a "physiologic nevus" with a hereditary defect in the absorption of vitamin A or in conversion of provitamin A. Vitamin A levels and carotene levels were obtained on eight of the patients reported, and normal values were present.* This is contrary to the findings of Peck[6] eight of whose cases had low vitamin A levels. Porter and co-workers[7] reported normal levels in four of their patients. Two of the patients under our care have responded only slightly to vitamin A therapy over a two months period.

*These determinations were done by Dr. A. P. Briggs, University of Georgia School of Medicine, Augusta, Georgia, using a technique similar to that of Kimble, M. S., *J. Lab. Clin. Med.* **24**:1055, 1939.

CONCLUSIONS

1. A family of 36 members, ten of whom were affected with keratosis follicularis, is reported.
2. The average age of onset was ten years.
3. The criteria for single dominant inheritance are fulfilled.
4. Vitamin A determinations were within normal limits on eight patients affected.

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A.M.A. Urges Crackdown on Excessive Fees.

The Board of Trustees of the American Medical Association has issued a statement urging county and state medical society grievance committees to crackdown on "the few members of the Association who charge excessive fees."

The statement, issued through the office of Dr. George F. Lull, secretary and general manager of the A.M.A., was signed by Dr. Louis H. Bauer, Hempstead, N.Y., chairman of the Board, and by the other eight Board members.

It stated: The House of Delegates at its Washington, D. C., meeting in December 1949 adopted a resolution which proposes the establishment of grievance committees by county and state medical societies. When this resolution was presented to the House, attention was drawn to the success of the committees already established in some states.

The Board of Trustees believes that the medical profession will be pleased to learn that at least eighteen medical societies now have grievance committees. These committees hear grievances concerning alleged improper practices or injustices. Frequently fees are involved.

The Principles of Medical Ethics state in part: "A physician is expected to uphold the dignity and honor of his vocation." Unfortunately, there have been reports of physicians' taking advantage of patients by charging exorbitant fees. Such reports, even though isolated, create an unfavorable impression of the entire medical profession. The establishment of grievance committees permits fair hearings for patients and physicians wherever the patient has been unable to adjust the matter satisfactorily with his physician. Sometimes a complaint is due to misunderstanding, perhaps because the physician neglected to explain to his patient the nature and cost of the services rendered. Such an explanation is especially indicated if unusual expenses are involved.

The Board of Trustees of the American Medical Association looks with disfavor on the few members of the Association who charge excessive fees. It urges state and county societies to discipline those members who, after a fair hearing and a decision that the fees charged have been excessive, refuse to reduce their fees to a level that is reasonable for the services rendered.

SICKLE CELL ANEMIA AND PREGNANCY

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Pregnancy occurring in women with sickle cell anemia was reviewed and brought up to date in 1945 by Spivack[2]. Since then three more cases have been added to the literature[3,4] bringing the total to twenty-one. We wish to add two more cases, making a total of twenty-three reported cases.

We do not feel that the incidence as cited above is as low as stated, but that the cases have not been reported. Since 1941 twelve cases, including the present two, have been reported, and it is more than likely that an increasing number will be reported until the frequency becomes great enough to make this complication of little interest.

CASE REPORTS

1. D. E. was a 21-year old, colored primigravida who was first seen on October 13, 1948, at the obstetrical clinic. She gave a history of "inflammatory rheumatism" at nine months of age with recurrences ever since. These episodes were described as bouts of joint-pain with swelling and redness of joints accompanied with dyspnea and occasionally with some fever. The present pregnancy was uncomplicated except for slight morning nausea in the first trimester. She had had no other serious illnesses, injuries, or operations except tonsillectomy and adenoidectomy at seven years of age. Physical examination revealed no gross abnormalities with the exception of a harsh mitral systolic murmur and a questionable, faint diastolic murmur. The uterus was enlarged to the size of five months' gestation. Routine blood count showed red blood cells 2.53 M; hemoglobin, 7.5 grams; white blood cells, 10,150; neutrophils, 68%; lymphocytes, 32%. Stained smear showed some hypochromia, anisocytosis, and poikilocytosis. Blood type A, Rh positive. Eagle Flocculation test was negative.

Patient was given hematinics, and after one month the hemogram had not changed appreciably. At this time sickling was first noted on the stained smear. This was verified by the 24 and 48-hour technique, and a diagnosis of sickle cell anemia was made. Skull X-rays were negative and X-ray of the chest was normal. During the next two months she was given three transfusions of whole blood. She went into labor spontaneously on February 4, 1949. Labor was completely uneventful, being terminated in 24 hours by delivery of a living female infant weighing 5 lbs., 14 oz. The estimated blood loss was less than 100 cc.

Post-partum course was uncomplicated. A transfusion was given on the fourth post-partum day, and at time of discharge the red blood count was 3.3 M and hemoglobin 10 grams.

Microscopic sections of the placenta revealed marked sickling of red cells on the maternal side and no sickling within the villi (fetal).

Six weeks post-partum the patient felt fine and had no complaints. The red blood cell count was 3.0 M and hemoglobin, 8 grams. Sickle cells were still prominent. She received a transfusion of 500 cc. of whole blood.

2. E. L. B., a 24-year old negress primigravida, was admitted to the hospital on March 7, 1947, complaining of lower abdominal pains, cramps in the thighs, and generalized malaise. Symptoms started on the day before admission. At the time of admission the patient appeared acutely ill. Temperature was 100.2°. The last regular menstrual period was June 12, 1946, but there was a history of spotting for two days in July and again in August. She had been seen regularly in the obstetrical clinic. At the time of admission it was felt that she was approximately seven months' pregnant. Prenatal course had been uncomplicated until the day before admission.

Red blood cell count was 2.6 M and hemoglobin, 56% on admission. The stained smear showed sickling, normoblasts and basophilic stippling.

A diagnosis of sickle cell anemia crisis was made, and treatment was started to combat the anemia. This consisted primarily of transfusions of whole blood. After two weeks hospitalization the patient was improved enough to be discharged. During the rest of the prenatal course she was carefully observed and given further transfusions as the need

arose. She went into labor spontaneously on June 1, 1947, and was delivered by low forceps after 19 hours labor. Blood loss in the third stage was slight.

The post-partum course was uneventful. She was followed in the clinic until December 12, 1947. During that time she continued to feel well. Red blood cell count on last visit was 3.02 M and hemoglobin, 8.5 grams.

The patient was next seen on August 5, 1948. At this time she was admitted to the hospital because of vaginal bleeding and history of having passed a fetus at home; her last menstrual period was three months prior to admission. Red blood cell count was 2.05 M and hemoglobin, 6 grams. She was transfused with whole blood, and shortly after admission she spontaneously passed the placenta. Vaginal bleeding promptly subsided. Following further transfusions, the red blood cell count was elevated to 3.6 M and hemoglobin, 10 grams.

Since discharge from the hospital, the patient has apparently remained in good health.

TABLE I

Case No.	Admission Symptoms	Baby	Mother	Treatment
1.	Pain in legs	6 mos. spon. ab.	Died in abdominal crisis	Liver and iron
2.	Pedal edema BP 145/105	Living, sickled rbc	Prolonged labor died 6 hrs. post-operatively	Caesarean section (Post-op. shock)
3.	Not stated	Stillbirth. Sickle cells in marrow	Died 6 weeks post-partum. Puerperal sepsis	Not stated. Autopsy: Multiple thrombi Pulmonary embolus.
4.	Acutely ill, jaundice, pneumonia	Twin 5 mos. preg.	Died undelivered.	Not stated.
5.	Rheumatoid pains jaundice and acute pneumonia	Term, macerated stillborn	Died 6 hrs. post-partum	Sulfapyridine. Autopsy: Hepato-splenomegaly.

N. B. Two others died later—one died 3 years after report following hysterectomy; the other died 1½ years after report, of pneumonia.

CONCLUSIONS

Two additional cases of sickle cell anemia and pregnancy have been reported, making a total of twenty-three cases reported in the literature to date. It is felt that the incidence of this complication is much greater than the reported incidence, probably due to the fact that sickling preparations are not done on all patients and that transfusions are frequently given for low blood counts without further study.

Numerous conclusions have been drawn from the article of Kobak *et al.*,[1] which we feel lack statistical significance due to the very small number of cases reported. In analyzing the deaths reported by Kobak (Table I), it is difficult to believe that pregnancy *per se* tipped the scales and caused death to occur sooner than would have otherwise occurred. In none of the cases was a blood transfusion reported as given. We feel that it is unfortunate that conclusions were drawn from these cases; for, due to the meager information available anywhere concerning this infrequent complication, there will be a tendency for Kobak's statements, right or wrong, to be quoted for some time as factual (e.g. Spivack[2]; DeLee-Greenhill[6]).

Is sickle cell anemia made worse by pregnancy, or is the physiological anemia of pregnancy due to hydremia superimposed on the sickle cell anemia the factor for the unfavorable blood picture? It is felt that pregnancy should not be any more injurious to the mother with sickle cell anemia than any other chronic disease (i.e., tuberculosis, diabetes, rheumatic heart disease, etc.) *if proper precautions and care are given.* In sickle cell anemia the emphasis is placed on blood transfusions. Martinak[4] reported one of his patients to be alive five years after delivery. One of our patients (Case #2) is still alive two years after her delivery, during which time she has experienced a spontaneous abortion. With trans-

fusions to correct the anemia and chemotherapeutic or antibiotic agents to combat any infection, there is little reason to believe that a favorable prognosis cannot be anticipated in the pregnant woman with sickle cell anemia.

Since this article was submitted for publication a paper was published by Anderson and Busby (*Am. J. Obst. and Gyn.* **58**:75, July, 1949) summarizing 33 cases and adding eleven of their own.

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Treat Acne Scars by Abrasion with Sandpaper.

Ordinary sandpaper has been added to the surgeon's equipment for treating persons whose faces are scarred and disfigured by acne, as considerable improvement can be effected in most such cases, according to a report by Dr. William G. McEvitt of the Straith Clinic for Plastic Surgery, Detroit, which appears in the March 4 J.A.M.A. The author emphasizes that the abrasion of scarred skin with sandpaper is a procedure to be done by a surgeon in a hospital and should never be attempted by anyone who is not a physician.

"Now, as in the past, the active disease is treated by dermatologists," Dr. McEvitt says. "It is the residual scar which is of interest to the surgeon. With the thinning of the normal skin in the area, the sharp distinctions of the pits are obliterated and a much smoother effect is produced.

"It is my custom to hospitalize the patient and abrade the entire face at one time, with anesthesia. Hemorrhage is controlled by pressure, after which petrolatum gauze, followed by a pressure dressing, is applied to the skin.

"Dressings are removed in 10 days, at which time the abraded area is healed and dry in most cases. After a rest period of three to six months, the patient is re-examined, and further abrasion is done as indicated.

"To date, results have been gratifying. No case has come to my attention in which some degree of improvement has not been achieved, and, in most instances, the improvement has been considerable."

Toward Effective Cancer Control.

April is the month when the American Cancer Society makes its annual appeal to the public for support of its programs. As more and more people live longer, the incidence of cancer increases and effort to control the disease must be intensified. Improved service to cancer patients is provided by support of cancer clinics, etc.

Of immediate interest to doctors is the professional education campaign. In addition to literature available, there is a series of motion pictures for professional audiences, one concerned with the general problem of early diagnosis of cancer, the second specifically with the early diagnosis of cancer of the breast, and a third on cancer of the gastrointestinal tract is to be released this year. It is hoped doctors will continue to cooperate in this work.

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia
and the University of Virginia Hospitals.
HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: B-63497

This 9 year old white male was referred to the hospital because of anemia and draining ears. The past two years the patient had recurrent otitis media with partial loss of hearing. He was treated intermittently with penicillin. During the month before admission otitis recurred with drainage. This was associated with increased listlessness, fever and periorbital swelling. During this episode the patient received penicillin, iron, and vitamins. Due to a lack of improvement and continuation of fever, he was referred for further study. There was no history of convulsions, chills, diarrhea or vomiting. There were no urinary symptoms, dysuria, pyuria, oliguria or nocturia. No history of urinary infection. The patient's early medical history was normal. Family history was negative.

Physical examination on admission revealed a temperature of 101.8°, pulse 120, respirations 24, blood pressure 105/65. The general appearance was of a lethargic, pale, chronically and acutely ill, 9 year old, white male with periorbital edema, but in no apparent acute distress. The skin was clear, but warm and dry. There were shotty anterior cervical nodes palpable. The axillary and inguinal nodes were palpable. There was generalized edema of the face. The eyes revealed periorbital edema with edema of the lids, greater on the left. The pupils were equal and reacted to light. Funduscopic showed retinal edema, engorgement and dilatation of the veins with hemorrhages and exudates. There were no large hemorrhages or Roth's spots seen. The external examination also demonstrated bilateral masses on the orbits which were firm and seemed to arise from the frontal bone periosteum, but could have been lacrimal glands. Associated with the edema of the eyelids was some proptosis. The right ear canal was filled with suppurative material of a foul odor. The left ear canal was clear and the tympanic membrane was dull and scarred. There was tenderness to pressure over the right mastoid area. The lips were dry. There was a mild pharyngeal injection. The tongue was slightly coated and there was bleeding of the gums over the right anterior incisor. The breath was foul. Nose appeared partially blocked, and the patient was breathing through his mouth. The neck was supple. The chest was normal to auscultation and percussion. There was a heart rate of 120, a soft systolic murmur was heard over the apex. The abdomen was soft, the spleen edge was easily palpable approximately 2-4 cm. below the costal border. There was no CVA tenderness. Genitalia was essentially normal and the rectal examination was normal. Extremities were normal. No pathological reflexes were elicited.

Admission urinalysis was clear, acid reaction, 1.008 specific gravity, no albumin, no sugar, no acetone. A few amorphous phosphates seen in the sediment. Admission blood count: the hemoglobin was 5 grams with 1,720,000 red cells, 8,250 white cells with no neutrophils, eosinophils, or basophils seen; 48% were large lymphocytes and 52% small lymphocytes. On smear the red cells were described as having a normochromic, normocytic appearance. Many atypical lymphs were seen, 40% had an appearance of blast cells. Blood culture on admission was reported as negative. Serology was negative. A repeat peripheral smear showed a large number of premyelocytes and blasts. The platelets appeared reduced. A sternal marrow smear showed many premyelocytes and myeloblasts showing Auer bodies, also a number of hemocytoblasts. The erythroid cells appeared reduced. A urine culture grew E. coli. On the 10th hospital day a repeat peripheral blood smear showed a marked thrombopenia, frequent myeloblasts, occasional premyelocytes and 63% lymphs. A culture from the ear showed Proteus vulgaris, sensitive to streptomycin. A heterophile determination was positive 1-224. On the fourteenth hospital day a blood culture report was negative. On the same day another peripheral smear showed 74% lymphs, frequent myeloblasts, a few premyelocytes and rare metamyelocytes. No mature polys or

platelets were seen. On the twenty-first day a peripheral smear showed 2% polys, 55% lymphs, and blast cells 43%, occasional myelocytes seen. A culture of the nose and throat reported a very scant beta strep growth. There were no staph aureus, pneumococcus or C. diphtheriae isolated. On the forty-first hospital day a peripheral smear was reported as lymphocytes 51%, blasts 42%, metamyelocytes 2%, polys 4%. Approximately 50% of these cells were reported as peroxidase positive. During the patient's forty-eight hospital days the total white count varied from 5,800 to 14,600. However, most of the time the count remained between 5,000 and 8,000. X-ray films of the mastoids were reported as showing no destruction of cells noted and no clouding to suggest mastoiditis. A film of the orbits showed no erosions. There was clouding of both antra. The patient was seen in consultation by the Tumor Clinic on the seventh hospital day and aminopterin was suggested as the form of therapy. A dosage of 1 mgm. per day as a start was given. The dosage later was increased to 2 mgm. daily. The patient received eight whole blood transfusions during his hospital stay, most being of 500 cc. units each, approximately one week apart. In addition to the whole blood the patient's treatment consisted of crysticillin daily and dihydrostreptomycin. The patient was given sedatives as indicated and was given amigen and dextrose solutions I.V. Oozing and frank bleeding of the gums was a troublesome problem while on the ward. The patient developed an extremely painful throat and a whitish membrane formed irregularly, extending to the soft palate and surrounded by much inflammation. The patient continued a downhill course with increased hemorrhagic tendencies and died forty-eight days after hospital admission.

DISCUSSION BY DR. JOHN EDGAR STEVENS*

The case for discussion today is that of a 9 year old white male who was referred to the hospital because of anemia and recurrent otitis media.

The latter condition had been known to exist for two years and partial loss of hearing had resulted. The anemia had been present at least one month; whether it had been longer than this, we are not told. Nevertheless, iron and vitamins had no appreciable effect on the anemia, and penicillin used recently and many times in the past two years had not been effective in treating the otitis media.

On admission, he was described as being "lethargic, pale, chronically and acutely ill, with fever and marked periorbital edema". We are told his past medical history was normal as was his family history. Familial history of anemia, regardless of what the clinical manifestations are, is an important point.

Physical findings of note were a temperature of 101.8; pulse 120; lymphadenopathy involving the anterior cervical chain, axillary, and inguinal nodes; and marked facial and periorbital edema. The eyes showed some proptosis and masses on the orbits which were firm and seemed to arise from the frontal bone periosteum. It was thought these were osseous in character, but the question of enlarged lacrimal glands was raised. Examination of the fundi revealed hemorrhages and exudates, another clue often neglected in such patients.

The right auditory canal was filled with purulent material and there was pain on pressure over the right mastoid area. The pharynx was only mildly injected but there was bleeding of the gums over the right anterior incisor. No mention is made of hypertrophy of the gums which is characteristic, especially of acute monocytic leukemia, but may occur in other types of leukemia. The nose was partially blocked and there was mouth breathing. The chest was clear to auscultation and percussion and the heart revealed a soft systolic apical murmur. The spleen could be palpated 2-4 centimeters below the costal border.

The admission blood count showed a hemoglobin of 5 grams with 1,720,000 erythrocytes. The total leukocyte count was 8,250 with complete absence of granulocytes, and 48% large lymphocytes and 52% small lymphocytes. Further study showed these cells to be "many atypical lymphocytes and 40% having the appearance of blast cells". The anemia was recorded as normocytic, normochromic. Subsequent studies showed a reduction of platelets and the appearance of immature granulocytes. A marrow smear revealed many myeloblasts with Auer bodies. This finding is a most significant one. These red staining rods are found in the cytoplasm of myeloblasts, myelocytes, or monocytes and their appearance is thought to be pathognomonic of an acute leukemia. Blood cultures were repeatedly negative. A culture from the ear showed Proteus vulgaris, sensitive to

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streptomycin, and the throat culture showed a scant beta hemolytic streptoccus growth. The heterophile agglutination was positive in a titre of 1-224. To further confuse the hematologic picture subsequent smears of the peripheral blood showed a definite lowering of the lymphocytes and an increasing number of peroxidase positive cells which would place them as being myeloid in origin. The count remained between 5,000 and 8,000. Bleeding from the gums became troublesome and exudation on the soft palate developed. In spite of transfusions and aminopterin therapy, the patient died on the 48th day following admission.

It is apparent that the anemia here is secondary to some disease process that is giving the multiplicity of findings. An anemia of infection is unlikely to account for a hemoglobin of 5 grams, nor is it likely that chronic otitis media could produce such profound anemia.

To turn our attention to causes that may produce such an abnormal hematologic picture, I would like to discuss briefly three conditions. Infectious mononucleosis, a disease particularly prone to occur in young people, is too often diagnosed with an unwarranted sense of security. Death can but infrequently occurs with this illness and most of us who have had this disease can attest to the morbid state and complications that may result. More important, though, is making such a diagnosis without sound basis. Recently, I have encountered two patients in whom the diagnosis of infectious mononucleosis had been made. On careful study both were found to have leukemia. Atypical lymphocytes, a positive heterophile agglutination in a titre of 1-224, generalized adenopathy, splenomegaly, and even thrombocytopenia found in this case, may be found in infectious mononucleosis as well as leukemia. Complete agranulocytosis, such as was found in this patient on admission, I have found in two patients with infectious mononucleosis. Others have also reported this as a complication of this disease. However, it is extremely unlikely to find an anemia below 11 grams of hemoglobin with this disease—unless a preexisting anemia was known to be present prior to onset. Even then it would be far better to withhold such a diagnosis until leukemia is definitely ruled out. The heterophile agglutination test is not helpful in this regard. A diagnostic elevation in the titre has been reported in the sera of patients with myelogenous and monocytic leukemia, but strangely no increase has been reported in sera of patients with lymphatic leukemia. Interestingly, the titre has been found elevated in patients with primary atypical pneumonia, scarlet fever, tuberculosis, and those who have been on parenteral liver therapy.

The blood smear is undoubtedly the earliest and most reliable test for infectious mononucleosis. Rarely can one with experience in hematology be confused by the characteristic picture this disease presents. While our patient today showed atypical lymphocytes, I doubt that the features presented were those so graphically described by Downey as being characteristic of infectious mononucleosis. If they were, certainly the other cells (blast cells) noted were not those usually associated with this disease and the presence of Auer bodies in stem cells of the marrow favor a more malignant process.

The second condition one should consider is a leukemoid reaction. Here, the blood picture may be indistinguishable from leukemia. At post mortem examination, however, leukemic changes in the organs are lacking. Such reactions are most often myeloid in type although lymphocytic reactions are seen in pertussis, acute infectious lymphocytosis, infectious mononucleosis, etc.

Infections, both pyogenic and non-pyogenic, may give rise to such a blood picture. Usually there is a leukocytosis with a definite left shift of the granulocytes if the myeloid elements are chiefly involved. The more severe the infectious process and the poorer the resistance of the patient, the more immature forms are encountered. On the other hand, if the infection is overwhelming, the bone marrow may be depressed and a low total white count be found.

Such reactions occur more commonly in children. Immaturity beyond the premyelocyte stage is not usual but may occur. Blast cells may appear in pneumonia, peritonitis, ostemyelitis, septicemia, tuberculosis, and other infectious diseases. Leukemoid reactions may also follow acute blood loss, or be part of the picture in any severe anemia, especially those of the hemolytic type. Diseases in which the marrow and other reticuloendothelial tissues are involved may give rise to such reactions. For example, lymphosarcoma and Hodgkin's disease, multiple myeloma, and metastatic carcinoma all may produce such a picture.

Leukemoid reactions are most difficult to distin-

guish from true leukemia. The site of the infection and the toxic, infectious blood picture usually furnish the best clues. Tuberculosis and malignant lymphomas, which so often escape recognition, are offenders in this respect. Recently, at the Veterans Administration Hospital, we had a patient die whose peripheral blood and marrow smears could not, without many reservations, be diagnosed anything but as acute leukemia. On post mortem examination there was no leukemic infiltration of the organs, but acid-fast tubercle bacilli were isolated. To Dr. Kinloch Nelson goes credit for his excellent presentation and correct diagnosis of this being a leukemoid reaction rather than leukemia, in a recent clinical pathologic conference.

In our case today, a site of infection is known, and there is a toxic blood picture with many blast forms. The high percentage of lymphocytes noted in peripheral smears on arrival fell as the disease progressed. Tuberculosis produces a lymphocytosis as the magnitude of the infection progresses. An increase in granulocytes with a relative decrease in lymphocytes is seen as the terminal stage approaches. This would certainly fit the case today. The anemia and thrombocytopenia with bleeding tendencies would be within the realm of possibility under such conditions. X-rays of the orbits showed no erosions, but no mention is made of osseous growth. Significantly, it seems, no mention is made of a chest x-ray. Surely one was done! No mention is made of an attempt to isolate the tubercle bacilli. It would be possible that here we are dealing with active tuberculosis with an associated leukemoid reaction.

The last condition to be discussed is acute leukemia. The clinical course and blood findings in this case are so characteristic that it makes me suspicious. Leukemia in young people to the age of 20 years is most often acute and the lymphocytic type predominates over the myeloid type. From 20-50 years of age, myelogenous leukemia, most often the chronic variety, is encountered. Past the age of 50 years, chronic lymphocytic leukemia is most often encountered.

The 9 year age of the patient, the finding of a severe anemia and thrombocytopenia and our admission blood smear with entirely lymphocytes and blast cells immediately suggests acute lymphatic leukemia. The generalized adenopathy and splenomegaly may occur with this leukemia, but often the course is so rapid that these do not occur. The coexistence of a chronic suppurative otitis media brings to mind that leukemia was originally thought to be the result of some infectious process. While this is no longer held to be true, it is true that cellulitis, gingivitis, and secondary infections are not uncommon in leukemia. In fact, some investigators, such as Farber, advocate daily penicillin in their cases as a prophylaxis against secondary invaders.

Otitis media and deafness may be produced by leukemic infiltration. With a two year history of this in our patient one wonders if an exception to the rule is found here, and this boy had a chronic leukemia during this period. It is possible, but not probable.

The ocular signs here are very significant. Hemorrhages and exudates were found on examination of the fundi. These have been reported as a finding in over half of the cases of chronic leukemia, particularly the myelogenous form. In acute leukemia, they may occur along with other hemorrhagic phenomena. Firm masses arising from the frontal bone at the orbit were suspected of being bony exostoses or enlarged lacrimal glands. Either one may be part of a diffuse leukemic infiltration. The marked periorbital edema may likewise be on the basis of localized leukemic involvement giving pressure symptoms.

Proptosis and the firm masses on the orbit along with other signs just discussed suggest the clinical picture of chloroma, or chloroleukemia. Localized bony tumors in the area of the orbit, sinuses, or skull which give exophthalmos and other pressure signs are characteristic of this condition. The blood picture and clinical course is like that of acute leukemia. A myeloblastic proliferation is seen in blood and marrow smears and it is doubtful that lymphatic leukemia over develops the picture of chloroma. The name chloroma was given because of the green color these tumors present.

From the blood studies, the original peripheral smear showing complete absence of granulocytes would lead one to a provisional diagnosis of acute lymphoblastic leukemia because of the presence of 40% blast cells. The count of 8,250 total white cells should not be misleading. Watkins and Heck state that 40% of all acute leukemias and 10% of all chronic leukemias have a total leukocyte count of 10,000 cells per c.mm. or below. Subsequent mar-

row examination did not show lymphoid elements to predominate. Instead, immature myeloid cells with Auer bodies in their cytoplasm were found. I do not recall seeing a case of lymphatic leukemia in which the marrow did not substantiate the impression obtained from the peripheral blood, if the disease dealt with was lymphatic leukemia. From this study, I would doubt that the disease was lymphatic in origin.

That it was an acute leukemia, I do not see how we can assume otherwise. My reason for this is the finding of Auer bodies in myeloblasts of the marrow. It is my impression that these are found only in acute leukemia and may be considered pathognomonic. If this is in error, then a more serious consideration of a leukemoid reaction should be entertained. However, a count that remained between 5 and 8,000 leukocytes, a severe anemia and thrombocytopenia with bleeding tendencies should be leukemia until proven otherwise.

From the later blood smears which showed immature granulocytes (50% being reported as peroxidase positive) and the marrow smear report, I assume the process to be an acute leukemia of a myelogenous type. This is unusual in this age group, but I cannot make any other choice. Lymphocytosis is greater in children than adults, and the increase here could be partially on this basis. A relative increase could arise from the stimulation of the lymphoid tissue. Lymphosarcoma cells in the peripheral blood are often mistaken for lymphocytes when a picture of leukemia is produced from these malignant lymphomas. However, with such not being reported in the marrow, I do not think a discussion of this type of leukemia important. On the other hand, lymphosarcoma producing a leukemoid reaction has been mentioned previously.

Hospital diagnosis: Chloroma.

Dr. Stevens' diagnosis: My impressions of the underlying disease from the information at hand would be in the following order:

1. Chloroma—with acute myelogenous leukemia (so called chloroleukemia).
2. Leukemoid reaction secondary to
   a. Tuberculosis?
   b. Lymphosarcoma?

PATHOLOGICAL REPORT: DR. E. PAUTLER*

The body was that of a pale, emaciated white boy. There was marked swelling of the eyelids and surrounding tissues of both eyes. The left eye was pushed outward and downward by a firm immovable tumor mass arising in the orbit. The right eye was displaced upwards by a firm immovable mass (9x5x1cm.) which extended over the malar eminence of that side and could be felt beneath the skin. Numerous firm nodules were felt beneath the scalp (1 to 3cms. in diameter) and another was palpated beneath the skin of the forehead (6x3x1cm.). Upon reflection of the scalp the nodules were found to be subperiosteal, firm and light green. Similar nodules (1-2cm. diameter) were noted on the inner surface of the cranium and on the outer surface of the dura. The ethmoid and sphenoid sinuses and the mastoid processes contained within them soft, somewhat friable, greenish tumor tissue. The mass in the left orbit measured 9x5x5cm; it was in the postero superior portion of the orbit being firmly bound to the wall. It was firm in the periphery but soft centrally and had a light green appearance. Similar green tumors were found subperiosteally along the sternum, ribs, vertebrae and pelvis, measuring from 1 to 5cms. in diameter.

The spleen was enlarged measuring 17x9x5cm. and weighing 240gms. On section the pulp was beefy red and numerous light gray nodules (1 to 2cm. diameter) were seen on the cut surfaces. The lymph nodes in the hilus of the spleen and other abdominal lymph nodes were somewhat enlarged and the cut surfaces were greenish-gray throughout.

A firm, green tumor (1cm. diameter) was noted in the perirenal fat at the upper pole of the left kidney. In the mucosa of the bladder there was a flat nodule (3cm. across) and a small, polypoid nodule measuring 0.3cm. in diameter. Six small (0.3-0.5cm. diameter) polypoid nodules were present in the mucosa of the stomach. The nodules in the stomach and bladder were not green but were reddish-gray in appearance. The liver weighed 950gms. and disclosed no tumor infiltration grossly.

Microscopically, hematoxylin and eosin stained sections of the tumor masses described above showed solid sheets of immature cells resembling blast forms which were consistent with those of the myelogenous

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type. The spleen, lymph nodes, lymphoid tissue of small intestine, and bone marrow were infiltrated by these cells but the liver was not involved. A few immature cells were noted, however, in the liver sinusoids as well as in the blood vessels of many tissues. Other organs, such as the gallbladder, pancreas and testes showed small accumulations of these cells but no gross tumor formation.

Pathological diagnosis: Chloroma (acute myelogenous leukemia).

REMARKS ABOUT "CHLOROMA" (T. M. Scotti, M.D.*)

(in answer to question from audience in regard to nature of the disease).

Chloroma refers to a tumor which is green in the fresh state. It is generally regarded today as a form of myelogenous leukemia, usually acute. In the earlier literature cases of lymphoblastic leukemia associated with green tumors have been reported. However, most authors feel that some of these probably were myeloblastic forms since cytologic studies were not as accurate in those days. Nevertheless, according to some, the possibility that such forms exist can not be denied. An occasional report of monocytic chloroma is noted but the probability of these being of myelogenous origin must be considered.

Chloromas occur in children and young adults. The green tumors have a predilection for periosteum, bone and dura. The bones of the cranium, especially about the eye, the sternum, ribs and spine are particularly involved. However, involvement of any tissue or organ can occur.

The nature of the pigment in the chloroma is not thoroughly known but it is thought to be a protoporphyrin. The color will fade when a specimen is exposed to the air and can be restored by treatment of the specimen with hydrogen peroxide.

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Bibliotheca Obstetrica

KROHN, HENRY (d.1816): Foetus extra uterus historia. London. William Bulmer, 1791. 4 plates.

This is a report of a case of ovarian pregnancy at 7 months. The illustrations were made by Hugh Chalon from life or rather 8 or 10 hours after death. The left ovary was replaced by the sac and the left oviduct was incorporated in the walls of the sac. The uterus was enlarged and contained a well developed desidua, thus supporting Dr. William Hunter's contention that the desidua is entirely maternal in origin.

The author was a native of Hamburgh. He graduated in medicine at Utrecht in 1762 and was for nearly thirty years physician midwife to the Middlesex Hospital. He was a licentiate of the Royal College of Physicians in London. He died at St. Neat's, Huntingdonshire, in May, 1816 at the age of eighty.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for February 1950 as compared with the same month in 1949, and for the period of January through February 1950 as compared with the same period in 1949, is as follows:

	Feb. 1950	Feb. 1949	Jan.-Feb. 1950	Jan.-Feb.-1949
Typhoid and paratyphoid	0	5	6	7
Diarrhea and dysentery	393	351	786	697
Measles	157	3572	280	5,935
Scarlet fever	114	103	247	166
Diphtheria	22	20	45	33
Poliomyelitis	3	3	9	7
Meningitis (epidemic)	14	10	24	19
Brucellosis	4	5	6	9
Rocky Mountain spotted fever	0	0	0	0
Tularemia	5	2	14	5

INFLUENZA

We are experiencing in Virginia an epidemic of influenza statewide in distribution. For 1950 to date (March 4), 14,911 cases have been reported. This compares with 10,071 reported cases for the year 1949. The occurrence of high incidence in Virginia has followed a pattern of two to three-year intervals since the serious epidemic and pandemic of 1918-1919, which, it is estimated, resulted in the death of twenty million persons. Fortunately, the recurring epidemics in Virginia in recent years have been comparatively mild, as evidenced by the rarity of complications. In the present epidemic, reported cases of pneumonia are not above the expected number for the season.

The main components of the clinical picture have been an abrupt onset with fever (101°-103°), muscular aching, malaise and varying degrees of prostration. Coughing has been common but not productive. In some cases pharyngeal lymphoid tissue has been prominent. Fever usually lasts two to three days.

Laboratory Findings:

Throat washings from an explosive outbreak in Arlington, Virginia, involving more than 100 of 150 pupils in one school, were examined by the National Institutes of Health, Bethesda, Maryland, who report the isolation of two strains of influenza virus—apparently type A-prime (F.M.-1). Eight of ten paired sera showed significant rise in antibody to F.M.-1 virus, with no rise to Lee virus.

The National Institutes further report findings in Texas, New York, New Jersey and Pennsylvania in all of which A strains were involved.

In positive findings reported by the Virginia Health Department Laboratory there was significant rise in antibody titre for type A. In none of the specimens examined was there an increase in titre for type B.

It is apparent, therefore, that in the present epidemic we are dealing with strains of influenza A virus as the etiological agent.

Floral Eponym
Melampodium

MELAMPUS

MELAMPUS, the teacher of Orpheus, cured the daughters of Proetus, King of Argos of attacks of insanity with Melampodium. He understood the language of birds and beasts after two young serpents, whose lives he saved, licked his ears while he was asleep.

Melampodium is the obsolete name for the black hellebore or Christmas rose.

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Social Work in Mental Hospitals.

The goal of the psychiatric social worker in our State hospitals is to maintain the patient's relation to the community and to initiate and augment plans throughout his hospitalization toward his leaving the hospital. Mental illness is an unsuccessful effort on the part of the patient to cope with his own drives and the pressures of society. The psychiatrist helps the patient with his inner conflicts while the social worker helps him in his relations with those in his environment and toward utilization of resources in the community.

Certain adaptations have to be made in a social service program to meet peculiar needs of each hospital. Distances, rural or urban population of the area served, and other factors have to be taken into account. The plan which is being outlined here is being adapted to the specific needs of each of the Virginia State Hospitals.

On admission to the hospital the social worker meets the patient and those who have accompanied him to the hospital in a comfortable office where there are no unnecessary bystanders. In this initial interview the patient is addressed as far as possible. The social worker talks with him about where he is and why he thinks his relatives (or others) have brought him to the hospital. If he has been deceived by those bringing him, there should be a discussion of this with an effort to relieve the resentment of the patient because he has been betrayed, and assistance should be given by the social worker to the relatives in their explanation of why they deceived him. By the time the physician has arrived, the social worker has told the patient that she will see him during the first three days after his arrival. The social worker then accompanies the relatives to the social service office for a history of the onset of the patient's mental illness, with especial emphasis on his medical history, his personality development and his interpersonal relationships. This provides an opportunity for the social worker to discuss with relatives the service she will be able to give them in future plans for the patient. The social worker sees the patient on the ward from one to three times to assist him in securing clothes or incidentals from his home or help him with plans which will make him more comfortable and relieve his anxiety about home affairs. After this admission service the social worker informs the patient that he may tell the psychiatrist whenever there seems to be any way she may be helpful to him. The social worker does not continue to see the patient unless the psychiatrist refers him to her.

Sometimes the attitudes of close relatives seem to be crippling to the patient. A relative may have prevented a patient from becoming normally independent, or may have expected more of him than he was capable of accomplishing. The social worker's training equips her to evaluate the difficulty in the relationships of relatives and patient and to help the relatives to provide an environment in which the patient's emotional needs will be met. In collaboration with the psychiatrist the social worker helps the patient to accept the unchangeable factors of his environment outside of the hospital.

There are times when a patient has no home of his own or cannot return to the home from which he has come. The social worker knows the community and, on the psychiatrist's referral, can submit plans to the psychiatrist and together they can determine what might be appropriate for a specific patient. The social worker then presents the alternatives to the patient and allows him to participate as far as possible in the decisions. Sometimes the best placement may be one in some other type of institution in which a salary and partial maintenance are available and in which working arrangements are flexible. Many times the placement of a patient in a home other than his own, in which he will have friendly interest and participation in family life, will bridge the gap between a hospital environment and life in his own family and community.

Some patients cannot be expected to return to the kind of position wihch they held before hospitalization. The social worker may help the patient arrange to learn a new type of work through the Vocational Rehabilitation Service or other vocational training programs offered throughout the State. Eye-

glasses, hearing aids, or other special devices may make the difference between a patient's ability or inability to maintain himself in the community. Continued medical care may be needed and the social worker may help arrange this.

Provision will undoubtedly be made by the hospitals, when the staff increases, for many patients to have psychiatric interviews after they have left the hospital. The social worker's interviews with patients will enable her to arrange schedules for the psychiatrist so that a minimum of his time will be required in order for him to provide the maximum benefit to patients. Monthly schedules may be maintained by the psychiatrists in a locality, with more frequent days scheduled in the same office for the social worker. Some visits will need to be made to homes by the social worker, but the greater part of her work should be scheduled so that a number of patients or relatives can be seen either at the hospital or a health or welfare office in the community, or a general hospital where she is located on the scheduled days.

The social worker makes available to patients, whether they are in the hospital or outside, every type of community resource which will be helpful to them. This includes using initiative in adapting and creating services for patients which had not been planned for this specific purpose. As this is accomplished the community is given increasing understanding of the patient; with understanding, fear and the attitude that mental illness carries a stigma are dispelled. Attention is thus drawn to the importance of community interest and support for improving the conditions within the hospitals so that increasing numbers of patients can become respected and contributing community citizens.

BOOK ANNOUNCEMENTS

Life Among the Doctors. By PAUL DEKRUIF in collaboration with RHEA DEKRUIF. New York. Harcourt, Brace and Company. pp. 470. Price $4.75.

This is a most irritating book—and one of the most interesting. It is a series of biographical sketches of present day medical pioneers, most of whom are little known by the medical public. DeKruif has a fixed idea that doctors in general are actuated by the profit motive and for that reason oppose everything that would likely reduce sickness and injure their practice. Nothing could be further from the truth. Every health measure on the statute books of Virginia (and I feel sure that is true for other States) was put there by the doctors and usually in opposition of the laity. In fact, the present Board of Health in Virginia was created not only by the support of the organized profession but was indirectly financed by it at first. The bill carried an appropriation of $40,000.00 per annum. At the same time, the doctors were also working for the repeal of their license taxes which amounted to the same figure. They had enough support in the Legislature to get the license bill repealed but the Legislature told them that they could not have both. They thereupon dropped their plea for license tax repeal, and the Board of Health bill was passed.

Pure water supplies, milk inspection and food inspection are due to the doctors' efforts. Who but doctors devised the various vaccines and immunizations used today and who but doctors administer them? Who advocate periodic health examination? Who started organizations for the eradication of preventable diseases, such as tuberculosis?

Medical pioneers are the most important group of persons there is. Without them, this would be a sorry world indeed. Each is extremely interesting as a character study. Invariably he or she is a hard worker and accomplishes things in spite of strong opposition. Almost invariably, he is actuated by a love of humanity and rarely is there a profit motive. Without exception, they are folk you would like to know about, but not one is indispensable. When world knowledge reaches a certain saturation, the next crystal of new knowledge will separate out. This may be brought about by someone in this country or that. Frequently it is done simultaneously or nearly simultaneously in widely separated areas, as in the case of the discovery of anesthesia.

I have often wondered why some discoveries gain almost immediate acceptance while others are almost forgotten. Our authors suggest a possible explana-

tion. Remedies that are easy to administer and show quick results are promptly accepted, whereas those that require difficult technics and prolonged observation are less readily accepted. There may be another explanation. The late Dr. Howland, when Chairman of the Section on Pediatrics of the Southern Medical Association, begun his address with a quotation to the effect that what he did not know did not bother him so much as what he did know that was not so. A new discovery that is proved convincingly is more promptly accepted than one that is hardly more than a likely possibility. Goldberger's discovery that pellagra was a deficiency disease was followed by the immediate adoption of his treatment and its refinement naturally followed. On the other hand, Cobunn's idea that the yolks of eggs prevent recurrences of rheumatic fever has received scarcely any notice.

The DeKruifs' subjects are well chosen both from the standpoint of interesting personality as well as diversified accomplishments. A biographer is very apt to exaggerate the importance of the accomplishments of his subject. This work is not free from that fault. As an example, from reading this book, you would not get the impression that cleaning up Chicago's milk supply was a belated part of a widespread movement, or that the great reduction in fetal and maternal death rates had also taken place in every State and city in the United States. Committees of doctors critically reviewed the maternal deaths in Philadelphia and New York before it was done in Chicago. Even in rapid treatment centers for venereal diseases, Chicago was not unique. The U.S. Public Health Service established five such centers, one of which was in Richmond. This in no way belittles the work of Dr. Bundesen, for everyone knows he deserves a lot of credit for what he did in Chicago. So far as I know, nowhere else has an employee of the health department gotten suddenly wealthy from doing Kahn tests. No other health officer has had a gangster pull a gun on him.

The authors are not always consistent. Apparently they think that group practice is superior to solo practice, and advance as one of the reasons that the group recognizes serious chronic illnesses earlier than the general practitioner. In the next chapter, they praise a general practitioner because she teaches her patients to practice on their families with occasional supervision from the doctor. Nevertheless, the book is well worth while. Every doctor could read it with profit and, were it not for the senior author's fixed idea, with enjoyment.

M. P. R.

The Salt-Free Diet Cook Book. By EMIL G. CONASON, M.D., and ELLA METZ. Lear Publishers, New York, 1949. 144 pages. Cloth. Price $3.00.

The introduction contains an excellent discussion of treatment of various conditions by low sodium regimes. The daily menus are set up with varying calculated amounts of sodium, but there is the possibility that a patient might, by interchanging recipes from one menu to another, greatly increase or decrease his total sodium intake. The general rules in the front of the book are useful; however, it would be more consistent and helpful if, for example, everywhere butter is mentioned, the word "unsalted" would be used with it. Many people might read only the recipes in which butter is specified, though "unsalted butter" was apparently intended by the authors.

The menus are made up of relatively expensive foods, both from the standpoint of cost and the standpoint of time in preparation. Referring to the total daily sodium in the menus in terms of "milligrams" is good because it is probably more impressive than speaking of "grams" of sodium and might encourage the patient to stay more closely within his restrictions. The recipe for low sodium bread would be more useful if made with water instead of milk and unsalted fat instead of butter. In this way the sodium content would be decreased and the patient could have more bread, if calories permitted.

Because of the monotony of many low sodium diets, this book is helpful in that it indicates the variety that is possible within the limitations set by the sodium allowance for the day. It would seem more useful as a reference book for the doctor or dietitian rather than to be given to the individual patient since the patient would probably require a good bit of instruction along with the book.

M. P. AND E. L.

MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Public Relations Conference.

Doctors came more than three hundred miles to attend the fourth annual Public Relations Conference held in the John Marshall Hotel on February 10. The main theme of the meeting was "Public Relations and the Local Medical Society".

It was intended that the morning session of the conference would be concerned more with the work of Members of the District Council and that the afternoon session be concerned more with the affairs of the Presidents and Secretaries of local medical societies. Incidentally, it seems that this is the first conference ever held in Virginia for Presidents and Secretaries of local medical societies.

Dr. J. M. Emmett, Chairman of the Public Relations Committee, presided over the morning session, and the program included presentations of "The Virginia Council on Health and Medical Care" by Senator Charles Fenwick of Arlington; "The Grievance Committee" by Dr. Alex. F. Robertson of Staunton, and "Areas of Interest in Public Relations" by Henry S. Johnson, Executive Secretary-Treasurer and Director of Public Relations of the Medical Society of Virginia. Also, Dr. Frank Wilson, Deputy Director of the Washington office of the American Medical Association, presented "The Trends in Washington".

At the luncheon, at which the visitors were guests of the Medical Society of Virginia, representation from some other professional groups, including dentistry, Virginia Pharmaceutical Association, etc., were recognized.

The main theme of the afternoon session was "The Local Medical Society and Public Relations". The session was conducted by Dr. John T. T. Hundley of Lynchburg, Councilor of the 6th Congressional District and Chairman of the educational campaign for the Society. Two outstanding speakers of the afternoon session were Mr. M. L. Meadows, Director of Public Relations and Counsel for the Medical Society of the State of South Carolina, who discussed "Holding and Improving Medical Services of Today", and Dr. Donald B. Koonce, Chairman of Public Relations Committee of the Medical Society of the State of North Carolina, who discussed "Doctors' Ills and Doctors' Cures". These talks were followed by informal discussion.

In spite of the season and inclement weather, the attendance was excellent. Contributions were made by several Public Relations Committees of local medical societies and each member of the council, members of the district council, the president, and secretary of each local medical society was encouraged to participate in the conference.

Now is the time for suggestions for making the next conference even better.

Legislation Proposed to the 1950 Virginia Legislature.

On January 6, 1950, the annual meeting of the Virginia Council on Health and Medical Care was held in Richmond and a legislative program to be supported in this year's General Assembly was agreed upon.

The following represents proposals by the Council, followed by the Governor's budget.

*1. Enough State money to match Hill-Burton funds for local hospitals, health centers, and medical service centers.

†1. No outright appropriations. $2,000,000 conditional appropriation included.

*2. Maintenance and personnel funds for Mental Hospitals amounting to $1.92 per day for each patient.

†2. The Budget allows $1.54 a day.

*3. At least $20,000,000 additional money is needed to continue the replacement of old and unsafe buildings.

†3. The Budget allows only $1,533,000 for this purpose.

*4. $110,000 additional money to establish mental hygiene clinics in those sections of the state that lack these important services.

†4. $30,000 additional money is provided.

*5. $1,200,000 to provide a 50-bed chest-surgery unit at each of the two medical schools.

†5. No funds provided.

*6. $2,500,000 to complete the Negro tuberculosis sanitorium at Elko.

†6. No funds provided.

*7. Enough funds to expand local health department services to every county in Virginia.
†7. Funds for this program are included in the Health Department appropriations.
*8. Money for 8 dental scholarships and 5 additional medical scholarships, for students pledging themselves to a period of rural practice.
†8. The existing scholarships are continued, but no dental scholarships are provided, nor any additional medical scholarships.
*9. Funds to expand teaching facilities at the two medical schools, so that some 30 more doctors can be trained each year.
†9. No funds provided.
*10. Additional scholarships for nursing education.
†10. No funds provided.
*11. Salaries for a full-time professor of preventive medicine at each of the medical schools.
†11. No funds provided.
*12. $600,000 additional money for indigent hospitalization.
†12. The amounts available in 1946 and 1948 are continued, but no increase is provided.
*13. $426,000 to expand the work of Alcoholic Studies and Rehabilitation.
†13. The Budget allows $235,000.

The Virginia Council on Health and Medical Care believes this report necessary to "let the citizens of the Commonwealth, and their representatives in the General Assembly, know what, through careful study, has been agreed on as necessary to protect and improve the health of all Virginia people."

A study of the forthcoming report by the Legislative Committee of the Medical Society of Virginia should be interesting when compared with the above proposals and Governor's budget.

*Proposals.
†Governor's Budget.

Washington Scene.

It seems that legislation proposed in Washington, at least at the moment, that is of greatest concern to the Medical Profession is more indirectly than directly calling for Federal Government controls.

At least a dozen bills are now pending which in themselves may not propose government control of various phases of medicine and medical service, but are construed to be "entering wedges", or "back-door" approaches to bureaucratic or federal governmental domination.

This may be a part of strategy to shift the emphasis from the proposal of compulsory health insurance for the time-being. Nevertheless bills such as S. 1411, 1453 and H.R. 6000 represent a real departure from individual enterprise America and should be opposed as well as S. 1679.

The fact that Virginia's representation in the United States House of Representatives and the United States Senate seemed rather solidly opposed to these schemes should not encourage an attitude of laissez-faire on the part of the membership of the Medical Society of Virginia. The situation still needs careful observation with ready effort to safeguard the American way of life.

District Conferences for Members of the District Council.

Conferences for Members of the District Council, to which Presidents and Secretaries and chairmen of public relations committees of local medical societies are being invited, are being scheduled in practically all of the nine congressional districts before June.

Principally, they will be concerned with items of current interest to local medical societies and the Medical Society of Virginia membership.

The plans of each conference are known to the Councilor of each District who will serve as general chairman.

Perhaps in the future these conferences might be held earlier in the fiscal year, perhaps October or November, to better advantage.

Invitation to Hawaii.

Numerous pressing communications from high officials of Hawaii, encouraging doctors attending the San Francisco Conference in June, to visit Hawaii following the conference, have come to Dr. W. C. Caudill, President of the Medical Society of Virginia.

Extensive arrangements of entertainment are being made by interested groups in Hawaii to make this a pleasant visit to the islands. Some of the events scheduled are sight-seeing trips, golfing, a fishing festival, a Japanese Teahouse Party, surfing, outrigger canoeing; a visit to the famous Diamond Head; Hawaiian Pineapple cannery; Oahu sugar mill, and Pearl Harbor.

A more comprehensive reference to affairs and events are available here to those interested and all are urged to consider the trip.

MEDICAL SOCIETY OF VIRGINIA

MEDICAL SERVICE COMMITTEE

The Community Health Council

Most likely we in Virginia do not attach much significance to this title. Neither do we realize that for a number of months there have been Health Councils in several sections of the state nor that we have had a state health council for over a year. It was apparently felt by the State Health Council that a local Health Council would succeed best if initiated and endorsed by its own local membership rather than being sponsored by a state organization. Therefore, little effort has been made to approach the problem on the local level and that is the purpose of these remarks.

The idea of the Community Health Council is being circulated by the Council on Medical Service of the A.M.A. A booklet entitled "The Community Health Council" has been prepared by them and may be obtained by request to the Council on Medical Service, A.M.A., 535 N. Dearborn Street, Chicago 10, Illinois. Dr. H. B. Mulholland of Charlottesville have been very active in writing this booklet and in the work which has been done by the State Health Council to-date.

At a meeting of the Medical Service Committee it was felt that this was a most worthwhile project and that we should make an effort to inform the localities of the potentialities of this organization and to encourage them to organize local health councils throughout the state. It was our belief that through this means not only could much greater service be rendered the public in regard to medical care and medical service but that if the medical profession took the lead in organizing such a council it would also have worthwhile public relations aspects.

It appeared to us on this committee that the Community Health Council is really designed to fill the need regarding medical agencies that the Community Fund was designed to fill for welfare agencies. Its objectives are stated on page 6 of the booklet referred to above but in brief, it is designed to serve as a clearing house for all agencies rendering medical care, or concerned with the health of the community, in their programs or anticipated programs, to correlate their activities and to assist them in making the best possible use of the physical facilities and money available in that area. When thoroughly understood, one readily sees that this includes an active educational campaign of the participating agencies in the activities of the others in the group. Although originally conceived to be of value only in rural areas it seems to be the consensus of opinion at the present time that the council should include the urban and rural area concerned as an economic unit.

Several areas in the state are in various stages of organizing health councils. It is hoped that they will keep the Medical Service Committee informed of their activities in order that we may serve as a clearing house between them and the Council on Medical Service. Any suggestion or assistance the Medical Service Committee may render you in your organizational efforts will be promptly given.

JOHN O. BOYD, JR.,
Chairman.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President—Mrs. C. E. Holderby, Hilton Village
President-Elect—Mrs. C. M. McCoy, Norfolk
Recording Sec'y—Mrs. Thomas S. Chalkley, Richmond
Corresponding Sec'y—Mrs. J. W. Carney, Newport News
Treasurer—Mrs. Kalford W. Howard, Portsmouth
Parliamentarian—
Mrs. Thos. N. Hunnicutt, Jr., Newport News
Historian—Mrs. M. H. Harris, West Point
Publicity—Mrs. Herman Farber, Petersburg

Reports from Auxiliaries.

Arlington

In December the Arlington Medical Auxiliary sponsored a rummage sale for the benefit of the Arlington Hospital Nurses Home. The proceeds of the sale helped in the purchase of a Television set for the Nurses Home.

A regular luncheon meeting was held on January 10th at the Washington Golf and Country Club. Dr. Claire Christman, Arlington school physician, spoke on the school health program.

At the meeting on February 14th, plans were discussed for the luncheon and fashion show for the benefit of the Arlington Hospital. Suggestions were also made for observing Doctors' Day on March 30th. A social hour followed.

Marie Norment,
(Mrs. R. L.).

Northampton-Accomack

The Auxiliary to the societies met January 10th at La Fonda, with a luncheon meeting. A general discussion of the financial situation of the organization culminated in a decision to have a food sale at the next meeting in order to raise a little additional money so that various worthy projects may be carried forward as in the past.

The chief effort of the auxiliary in the past year has been toward raising funds for the Grace Wilkins Holland Memorial, which is to be in the form of permanent care of the furnishings of a room at our hospital. Mrs. W. T. Green, who is chairman of the committee, gave an account of the purchases already made, and the hope was expressed that other organizations might consider taking the upkeep of a hospital room as a permanent project.

After discussion of various other business items, including the proposed auxiliary newspaper, the guest speaker, Miss Evelyn Heath of the hospital was introduced and gave an interesting and informative talk on The Present Day Hospital Picture, in which she brought out, among other things, some of the reasons why the cost of hospital care has gone up, and some of the changes in hospital routine and methods in recent years.

Petersburg

At the regular meeting November 29, 1949, an appeal was made by Mrs. Carney Pearce, president, for the Medical Services and overseas fund for all surplus surgical and medical supplies. These were collected and packed by several volunteers and a total of eight boxes was sent to New York for shipment overseas.

The Sewing Committee chairman thanked the members for monogramming forty-eight operating gowns for the local hospital.

The constitution of the Auxiliary which has just been re-written by Mrs. F. J. Wright, Sr., and Mrs. J. E. Hamner was read and discussed.

Upon a request from the executive board, a new resolution against compulsory health insurance was adopted and a copy of this will be forwarded to Congress.

Dr. Leta White was guest speaker at the regular monthly meeting of this Auxiliary on January 31, in the home of Mrs. Julien Hopkins. Dr. White stressed the importance of the Auxiliary in bringing the public closer to the needs and requirements of the new hospital which will soon be under construction.

Mrs. Meade Edmunds announced that final plans for the Hospital Linen Shower, sponsored annually by the Auxiliary, had been completed for the afternoon of February 28 at the Nurses' Home, at which time tea will be served and the linens displayed. The linen is to replace hospital linens for which there is great need.

Appreciation was expressed to the group which manned the March of Dimes.

A special hospital committee, composed of Mrs. Fletcher J. Wright, Jr., chairman, Mrs. E. L. McGill, Mrs. Herman Farber, and Mrs. William Grossman, was named to investigate the possibility of the formation of a new Hospital Auxiliary to take

care of the sewing and other jobs essential for the smooth running of the hospital.

Two new members were welcomed to the Auxiliary.

The shower was held on the 28th as scheduled and, in addition to bedding, $375 in cash was received for linens.

Preceding the shower and entertainment, plans were discussed for Doctors' Day and the Spring rummage sale. Also, printed copies of the newly re-written constitution were distributed to the members.

HILDA P. LIVINGSTONE,
Secretary.

RICHMOND

Fifty members, all bringing toys for the Crippled Children's Hospital, were present at the Christmas party held at Mrs. Thomas Wheeldon's home. Mrs. L. Benjamin Sheppard sang several solos and led the group in singing carols. Miss Mary Dowd, who is with the City Recreation Division, told Christmas stories.

In response to a request for medical and surgical supplies for relief work abroad several boxes were packed by auxiliary members and shipped overseas.

More than one hundred doctors and their wives attended the annual dinner-dance given by the Auxiliary on February 3rd at the Commonwealth Club, honoring Doctor's Day. It is the Richmond Auxiliary's belief that the doctor should be honored while alive, and not after he is deceased, for his services to humanity. This was the fourth such dinner party and the best attended so far.

Members of the Auxiliary, under the leadership of Mrs. Edward S. Ray, President, also acted as judges in the "Reasons Why" contest sponsored by Station WRVA to help raise funds for the March of Dimes. Daily prizes were awarded as well as a final prize of a week's trip to Bermuda.

The State president, Mrs. C. E. Holderby was a guest at the meeting on the 17th of February.

WARWICK

On September 30th the Auxiliary was hostess at a weiner roast at the Mariner's Museum Picnic ground for the faculty and incoming classes of student nurses from Elizabeth Buxton and Riverside Hospitals.

On October 9-12, the Auxiliary acted as hostess to the auxiliaries of the state at the annual convention held at the Chamberlin Hotel, Old Point Comfort.

At a meeting on October 26th at the Colony Inn, Hilton Village, plans were made to hold a Bazaar on November 30th at the Elizabeth Buxton Hospital to raise funds for the Nurse Recruitment Program. The Lucile Hunnicutt Jones Award is given once a year to the nurse who is most outstanding in her work at the end of the pre-clinical period. An award is made at each of the two hospitals, Riverside and Elizabeth Buxton.

Mrs. O. Watts Booth, *Hygeia* chairman, gave a very informative talk on publication of *Hygeia* and the benefits the public would derive from this magazine.

On November 30th the bazaar at the Elizabeth Buxton Hospital proved very successful. All officials and personnel of the hospital were most cooperative and the members of the auxiliary are to be commended for their hard work and efforts to make this annual event a success.

On December 13th the Auxiliary held a social meeting followed by a trip to Mills Seafood Factory, Seaford, where the local Medical Society served as host at an oyster roast.

EDITORIAL

Long, Morton, Wells and Jackson

THE next time you undergo an operation, offer a prayer for Long, Morton, Wells and Jackson. The world has enjoyed the benefits of anesthesia for scarcely more than one hundred years. Before 1842, people endured surgery with the aid of such drugs as morphine, alcohol, mandrake and/or a strong mind. Such fortitude was engendered by severe and long continued suffering or shock, and pain accompanying accident or war injury. Hence, surgery was largely a matter of lithotomies, amputations, setting bones, superficial wounds and cataract operations. The era of abdominal surgery was slowly developing, handicapped by the need of operating rapidly upon an unanesthetized patient.

As usual, with all great discoveries, there were preliminary observations and near discoveries. Sir Humphrey Davy in 1800 noticed the anesthetic property of nitrous oxide gas, and suggested that it might be useful in surgical operations where there was no great loss of blood. Some twenty years later, Henry Hill Hickman produced "Suspended animation" in animals with CO_2 and was able to operate upon them in this state without causing pain. He was unable to get a hearing by the Royal Society of London. The French Academy of Medicine heard him but was not impressed. In the meantime, there was a great interest in the gases that Joseph Priestly had discovered—carbon dioxide, oxygen and nitrous oxide. They were used as therapeutic agents in diseases of the lung.

"Professors" went about the United States lecturing, and demonstrating their effects. Frequently they would administer laughing gas or ether to some of the audience who would stagger about and talk foolishly. It became a fad for young people to have ether frolics and laughing gas parties. Sometimes they would injure themselves and have no knowledge of how they received their bruises. In January 1842, Dr. William E. Clarke of Rochester, New York, removed a tooth painlessly after giving the patient ether gas. According to Keyes, this seems to be the first ether anesthesia. Clarke attached no great importance to the performance and nothing more was heard of it.

In March 1842, Crawford W. Long (1815-1878) of Jefferson, Georgia, removed a tumor from the neck of James M. Venable under ether anesthesia. Long continued to use ether anesthesia for minor operations, and hoped to test it on a major operation, but had no opportunity to do so. He was also deterred from publishing his result because mesmerism had been the rage and was being ridiculed. Finally, however, he published his work in the *Southern Medical and Surgical Journal,* in 1849. He had also used ether at the birth of his second child, December 17, 1845, but did not mention that.

In the meantime, investigations had been going on independently in New England. In 1844, Horace Wells, a dentist of Hartford, Connecticut, began the use of nitrous oxide in dentistry and continued until a fatality caused him to give up practice, but not before he had acquainted his former partner, William Thomas Green Morton, with his results. Morton had studied medicine (but did not graduate) and he consulted his former teacher of chemistry, Charles T. Jackson, who recommended that he try sulphuric ether instead of nitrous oxide. Morton tried it for a tooth extraction and it was successful. He then persuaded Dr. John Collins Warren to let him anesthetize a surgical patient. Accordingly, on October 16, 1846, Dr. Warren performed the first

surgical operation under ether anesthesia in the Massachusetts General Hospital, removing a congenital vascular tumor from the patient's neck. The next day Dr. Hayward, with Morton again as the anesthetist, removed a fatty tumor from the shoulder. With the prestige of the Massachusetts General Hospital back of it, anesthesia received immediate and widespread approval.

The subsequent story of this great American achievement is indeed a sad one. Almost invariably advances in medicine have been made by unselfish men of high character—heroes one likes to read about. This case where there was enough glory to satisfy all, proved to be a notable exception. The group is a heterogeneous one—two dentists, a chemist and a general practitioner. In the first place, Morton, a dentist, tried to keep his remedy a secret, and attempted to patent it under the name of "Leothon". In the second place, Congress attempted to ascertain who was the discoverer of anesthesia and to give him an award of $50,000.00. A bitter controversy ensued that dragged along for years and resounded to no one's glory.

The three New Englanders met tragic fates. Wells became mentally upset, and in 1848, committed suicide by opening his radial artery. Morton died July 5, 1868, in Central Park, New York of acute mania. Jackson died August 28, 1880, in an asylum at Somerville, Massachusetts, where he had been an inmate for seven years. Only Crawford W. Long, the one medical practitioner in the group, escaped unscathed. Perhaps it was his medical background that protected him. At any rate, he carried on as a general practitioner until the Civil War, served in the Confederate Army, returned to private practice, and in 1878, died of apoplexy while administering ether to a woman in labor.

Dr. Long did not receive any recognition as the first to use surgical anesthesia until shortly before he died. It came about in a curious round-about manner. Dr. H. P. Wilhite of Anderson, South Carolina, a pupil of Long's, had taken a patient to New York to see Marion Sims. In the dressing room after the operation they fell to talking, as doctors do. Sims was full of enthusiasm for the Boston discovery of ether, and Wilhite corrected him and told him that Long down in Georgia had used ether previously. Sims was somewhat amazed and undertook an investigation. He found that unquestionably Long was the first to perform a surgical operation upon an anesthetized person. Sims published his findings in the VIRGINIA MEDICAL MONTHLY for May 1877.

This is the 11th of a series of "Doctors for whom the public should be thankful."

Marital Cesarean Sections

IN the long history of Cesarean section, there have been many strange cases reported. Gould and Pyle relate two cases of spontaneous Cesarean deliveries. Harris collected some ten cases of cattle horn (including one buffalo case) operations with survival of six mothers and five babies. Young gives accounts of eleven self-inflicted operations in which eight mothers recovered. In at least sixteen cases, the operation was performed by the husband.

The operation was performed by the ancient Persians and probably also by the ancient Hebrews, but no reports of cases have come down to us. Bauhin reports, in his appendix to Rousset's work, what is usually considered the earliest operation. In 1500 A.D., Elizabeth Alespachin, the wife of Jacob Nufer, fell into labor. Thir-

teen midwives were unable to deliver her. Nufer sent for the lithotomist who refused to operate. Finally, in desperation, Nufer obtained the consent of the mayor to operate, which he did, saving both mother and child. The first operation in the United States of America was performed by Dr. Jesse Bennett upon his own wife in 1794. It was reported by Dr. Joseph L. Miller in the MONTHLY (January 1929) and is well known to the readers of the MONTHLY. Mrs. Bennett who was Elizabeth Hog, the daughter of Major Peter Hog, was unable to deliver the baby. Dr. Alexander Humphreys of Staunton attempted a forceps delivery, but was unsuccessful. He then expressed an opinion that there were only two courses left, craniotomy or Cesarean section, and the prognosis poor in either case. Mrs. Bennett chose the latter and Dr. Humphreys refused to perform the operation. Dr. Bennett thereupon operated and, after removing the child, he removed both ovaries, so as to spare himself such an ordeal in the future. Both patients survived.

Dr. Sonne (or Sonnius), a physician at Bruges, performed this operation seven times on his own wife and all the children lived. A surgeon at Paris operated on his wife five times. De Presseux operated successfully upon his wife and the celebrated Olaus Rudbecke, professor of Physic at Upsula, and founder of the botanic garden which was the scene of Linneus' labors, saved his wife by this operation. Of these sixteen operations, the sixteen mothers survived and at least ten of the babies.

Cancer Tests

THE American Reagents Company, Philadelphia, Pennsylvania, circularized Virginia physicians in January with an invitation to purchase a kit of reagents with which to perform the Huggins test for cancer.

Dr. Charles Huggins, to whom we are indebted for our knowledge of the role of hormones in prostatic cancer, in April, 1949, reported to the American Association for Cancer Research on a test for cancer. The blood of people who have cancer usually coagulates defectively. Iodoacetate inhibits the coagulation of blood exposed to heat. Huggins measured the amount of iodoacetate necessary to inhibit coagulation. An abnormally small amount of iodoacetate was needed to inhibit coagulation of the blood of victims of cancer, tuberculosis and massive infection.

Unfortunately, the accuracy of the test in other peoples' hands has not been uniform. It has been given a trial in many laboratories, including those of the Medical College of Virginia and the University of Virginia, and has been discarded by both medical schools except for experimental purposes. False positives, especially in older people, and false negatives were far too numerous. While the subject is not a closed one and Huggins' test or something similar may yet find clinical application, the Cancer Committee of the Medical Society of Virginia wishes to inform the members of the Society that it considers the tone of the American Reagents Company advertisements overenthusiastic. The Cancer Committee does not recommend the Huggins test for office practice or for clinical laboratories. It considers the test in an experimental stage, and advises the members of the Society to use it only for experimental purposes.

GEORGE COOPER, JR., M.D.,
Chairman, Cancer Committee
Medical Society of Virginia

SOCIETY PROCEEDINGS

The Alexandria (Va.) Medical Society

Will hold a Clinical Assembly on SUNDAY, APRIL 16, 1950, at the Ficklin School Auditorium in Alexandria. The speakers will be:

Custis Lee Hall, M.D., Immediate Treatment of Fractures

J. Mason Hundley, Jr., M.D., Vaginal Bleeding

Theodore E. Woodward, M.D., Clinical Application of the Newer Antibiotics and their Limitations

Alexander J. Schaffer, M.D., Pediatric Emergencies

Robert J. Coffey, M.D., Acute Surgical Abdomen

Harvey J. Tompkins, M.D., Psychiatric Emergencies and What the Medical Man Can Do

J. Edward Berk, M.D., Treatment of Duodenal Ulcer

Sidney Scherelis, M.D., Acute Cardiac Emergencies.

The registration fee will be $2.00, which will include the luncheon and a cocktail party to close the session.

Registrations may be mailed to Alexandria Medical Society, P. O. Box 192, Alexandria, Va.

The Warwick County Medical Society

Held its February meeting on the 14th at which time a new member was elected and Dr. E. R. Martin was elected to honorary membership. Dr. E. L. Alexander spoke on the two bills currently before Congress, dealing with Federal subsidization of medical schools, and with Federal care of school children. The Society voted to appoint a Public Relations Committee and approval and continued support of the Red Cross Blood Program was promised the local chairman.

Dr. George S. Grier, III, is President and Dr. J. W. Carney secretary of the Society. Both are of Newport News.

The Wise County Medical Society

Which met at Norton Hotel, Norton, February 1, was attended by nineteen members in spite of very inclement weather.

A very interesting discussion of "Surgical Diseases of the Chest" was presented by Dr. Marcellus A. Johnson, III, of Lewis-Gale Hospital, Roanoke, Virginia.

At the business meeting the following officers were elected for the year 1950: President, Dr. C. L. Harshbarger, Norton; vice-presidents, Dr. W. B. Barton, Stonega and Dr. E. P. Cox, Norton; secretary-treasurer, Dr. J. D. Culbertson, Coeburn. The board of censors consists of Dr. A. H. Bond, Dr. E. J. Benko and Dr. L. N. Waters, all of Norton.

Roanoke Academy of Medicine

At the regular monthly meeting of the Academy on March 6, at Hotel Roanoke, Dr. R. Earl Glendy spoke on Developments in Cardiovascular Surgery With Particular Reference to the Indications for Operative Intervention, and Drs. Henry Lee and Frank Beckel gave a paper entitled Painful Neuroma of the Abdominal Wall.

Dr. M. A. Johnson, Jr., is president of the Academy and Dr. William H. Kaufman is secretary.

Tazewell County Medical Society.

At its December meeting, the following officers were elected for the year 1950: President, Dr. J. W. Shawver, Tazewell; vice-president, Dr. Frank McCue, Richlands; and secretary-treasurer, Dr. Mary E. Johnston, Tazewell.

The Elizabeth City County Medical Society

Met on March 2nd at the home of Dr. F. A. Kearney in Phoebus and made plans for more regular meetings to be held approximately once a month. A new member was elected. A Grievance Committee, consisting of the three oldest members of the Society, was appointed, the names not to be made public.

It was decided to take a more active part in the campaign to help combat further socialization of medicine and to see that the various candidates for public office in that area express themselves publicly and explicitly in regard to their views on Federal Compulsory Health insurance.

ROBERT H. WRIGHT, JR.,
Secretary.

The Hopewell (Va.) Medical Society,

At a recent meeting, elected Dr. John S. Williams as president, Dr. A T. Brickhouse vice-president and Lee S. Barksdale secretary-treasurer.

NEWS

The Tri-State Medical Association of the Carolinas and Virginia

Had a very enthusiastic meeting in Fayetteville, N. C., February 19-20, under the presidency of Dr. Russell Buxton of Newport News. The entertainment of the ladies as well as the doctors added much to the enjoyment of those attending. At the business session, Dr. R. B. Davis of Greensboro, N. C., was installed as president, and Dr. W. R. Wallace of Chester, S. C., was named president-elect. The three new vice-presidents elected are: Dr. W. A. Johns, Richmond; Dr. W. T. Parker, Fayetteville, N. C.; and Dr. W. C. Cantey, Columbia, S. C. Dr. J. M. Northington, Charlotte, N. C., was re-elected secretary-treasurer for his 26th term. Four new councilors are Dr. S. E. Kredel, Charleston, S. C., Dr. Furman Wallace, Spartanburg, S. C., Dr. M. A. Griffin, Asheville, N. C., and Dr. W. R. Jordan, Richmond. Columbia, S. C., was chosen as the next place of meeting which will be February 19-20, 1951.

The Virginia Society of Ophthalmology and Otolaryngology

Will have its annual meeting with the West Virginia Academy of Ophthalmology and Otolaryngology at the Greenbrier Hotel, White Sulphur Springs, W. Va., May 8 and 9. Dr. Francis H. McGovern of Danville is president of the Virginia Society and Dr. P. N. Pastore of Richmond, secretary-treasurer.

Dr. Joseph E. Barrett,

Of Williamsburg and Richmond, has been reappointed by Governor Battle as State Commissioner of Mental Hygiene and Hospitals for a term of four years to run concurrently with that of the Governor.

News from University of Virginia Department of Medicine.

The University of Virginia has received a grant of $25,000 from the John and Mary R. Markle Foundation for a five-year period in support of a Scholarship in Medical Sciences for Dr. Charles G. Craddock, Jr. Dr. Craddock received the M.D. degree from the University in 1944 and completes his residency at the University Hospital in June.

Dr. John Hamilton Allan, Assistant Professor of Orthopedic Surgery at the University of Pennsylvania Graduate School of Medicine, has been appointed Professor of Orthopedics and Chairman of the School of Orthopedics at the University of Virginia, effective July 1, 1950.

Dr. Joseph F. A. McManus, Associate Professor of Pathology at the Medical College of the University of Alabama, has been appointed Associate Professor of Pathology at the University of Virginia, effective July 1, 1950.

Dr. Monroe D. Eaton, on leave of absence from the Harvard Medical School, is Visiting Professor of Bacteriology at the University of Virginia for the second semester.

The Wisconsin Surgical Club visited the University of Virginia Hospital on March 8th and 9th.

Recent visiting lecturers at the University of Virginia Department of Medicine:

Dr. Willard O. Thompson, University of Illinois —Subject: "Recent Developments in Our Knowledge of the Adrenals."

Dr. Theodore L. Squier, Marquette University—Subject: "Quantitative and Differential Changes in Circulating White Cells after Varied Stimuli."

Dr. Richard H. Sweet, Harvard University—Subject: "Recent Advances in Thoracic Surgery."

Dr. Henry T. Randall, Columbia University—Subject: "Metabolic Studies on Surgical Patients."

Dr. Frank Meleny, Columbia University—Subject: "Recent Advances in Antibiotic Therapy."

Health Department News.

Dr. J. A. Love has been appointed Health Officer for the Halifax County Health Department, with headquarters at Halifax. This appointment became effective March 1, 1950.

Dr. Robert W. Jessee has been appointed Health Officer for the Carroll-Grayson Health District, to become effective March 16. Headquarters are at Galax.

International and Fourth American Congress on Obstetrics and Gynecology.

Attention is again called to the fact that this Congress will be held at Hotel Statler in New York City on May 14-19. Addresses and discussions will be by many of the foremost authorities on these subjects.

For registration details, housing data, etc., address inquiries to Dr. Fred L. Adair, 161 East Erie Street, Chicago 11, Illinois.

The American Academy of Neurology

Is holding its first interim meeting in Cincinnati on April 14 and 15. The meeting this year is being held in conjunction with the American Chapter of the International League Against Epilepsy. On April 15 there will be a joint meeting between the two societies and a large symposium on psychomotor epilepsy.

The American Academy of Occupational Medicine

Held its second annual meeting at the Netherland Plaza Hotel in Cincinnati on February 17 and 18. The following officers and Board of Directors were elected for the ensuing year: President, Dr. C. L. Savage, Waynesboro; Vice-President, Dr. Frank M. Jones, Montreal, Canada; Secretary, Dr. Leonard J. Goldwater, Columbia University School of Public Health; and Treasurer, Dr. A. F. Mangelsdorff, Bound Brook, New Jersey.

Dr. Robert A. Kehoe of Cincinnati, Ohio, as retiring president, became a member of the Board of Directors, and Dr. J. M. Carlisle, Rahway, New Jersey, was elected to the Board of Directors. Dr. James H. Sterner of Rochester, New York and Dr. G. H. Gehrmann of Wilmington, Delaware are also members of the Board.

The Southwestern Virginia Medical Society

Will hold its regular Spring meeting at the Martha Washington Hotel in Abingdon, on Thursday, May 4. The afternoon meeting will begin at two o'clock followed by a business meeting after the scientific program. A Woman's Auxiliary will be organized at the afternoon meeting.

Drs. James Chitwood of Pulaski and Thomas C. Todd and Frank Sutterlin of Bristol will appear on the afternoon program.

The night meeting will be in the form of a banquet and the guest speaker is Dr. Asper from Johns-Hopkins, Baltimore.

Medical College of Virginia News.

Drs. Helen B. Taussig and H. William Scott, Jr., of the faculty of Johns Hopkins University joined members of the faculty of the College in the presentation of a symposium on congenital heart disease at the Medical College of Virginia, February 17, 1950. Members of the College faculty who took part are: Doctors Erling S. Hegre, Reno Porter, Howard McCue, William B. Porter, Thomas M. Scotti and Nathan Bloom. More than 200 physicians from West Virginia, North Carolina and Virginia attended the symposium which was sponsored by the Department of Continuation Education of the college.

Dr. Helen B. Taussig of the faculty of Johns Hopkins University was selected as the first lecturer in an annual series to be sponsored by the Alpha Epsilon Iota Sorority of the Medical College of Virginia. She gave the lecture at the college on Friday, February 17 on the subject "Cyanotic Malformations Amenable to Surgery—Diagnosis and Differential Diagnosis".

Eight promotions from the adjunct to the major faculty of the college have been approved for 1950-51. They are:

Mr. W. L. Robinson from instructor in to lecturer in legal medicine; Dr. Irving B. Gold from associate in to assistant professor of anesthesiology; Dr. Henry C. Kupfer from instructor in to assistant professor of clinical pathology; Dr. Spottswood Robins from associate in to assistant professor of gynecology; Dr. Edwin H. Rucker from associate in to assistant professor of gynecology; Dr. Paul D. Camp from associate in medicine to assistant professor of clinical medicine; and Miss Sara Jane Houtz and Miss Thelma Pedersen from instructors in to assistant professors of physical therapy.

Four new appointments on the major faculty as lecturers in legal medicine are: Drs. Russell Fisher and Robert K. Waller and Messrs. Elwood Ford and Kenneth Redden.

A Regional Fracture Committee Meeting

Will meet at the Pittsburgh (Pa.) Athletic Club, Thursday, April 13 at 2:00 p.m. Between 2 and 5:30 there will be a presentation of fracture problems by members or visitors with a showing of x-rays or cases. Following the dinner at 6:00 p.m. the guest speaker, Dr. Edward L. Compere of Chicago will give an address on Segmental Fractures of Long Bones. Dr. Wilton H. Robinson, 144 South 20th Street, Pittsburgh 3, is chairman.

The American Physicians Art Association

Will have its twelfth art exhibition in conjunction with the American Medical Association Con-

vention at San Francisco Auditorium, June 26 to 30, 1950.

Any physician who follows the hobby of fine or applied arts can exhibit at this convention by becoming a member of the A.P.A.A. and applying for entry blanks and shipping labels of the secretary F.H. Redewill, M.D., 526 Flood Bldg., San Francisco, 2, Calif.

Over one hundred trophies will be awarded to advanced physician artists (A) as well as to beginners (B who have done art work less than two years) the main purpose of the Association being to encourage all physicians to take up art in some form as an avocation.

For those physicians who have never done any painting, photography, sculpture, wood or metal craft, etc., they can, without obligation, learn how to become creditable amateurs by writing to the secretary.

The American Physicians Art Association with its 4,000 members is recognized as having the finest amateur art shows in the world during the A.M.A. conventions and the Association is desirous of having every physician who does art work to participate.

Dr. T. W. Hankins

Has recently moved from Fordwick to Swoope, Route 1, where he has established his practice.

Dr. William E. Bray, Jr.,

Has resigned his position as instructor in medicine in the Medical School of the University of Virginia to accept the position of medical director and internist in the Chesapeake and Ohio Hospital at Huntington, West Virginia. He will enter upon his new duties on May the 1st. Since 1945, Dr. Bray has also been associate physician in the Student Health Department and in August of that year he became medical director of the Bessie Dunn Miller Center for Cancer Prevention.

Dr. Leon L. Gardner,

Retired Army officer, has been appointed as chief of Preventive Medical Service in the Richmond City Health Department, and entered upon his new duties the latter part of February. He succeeds Dr. Paul W. Bowden who has been appointed assistant director of the department.

Dr. Gardner was born in Foochow, China, and served in the Army from 1924 to 1949. He was retired from the Army with the rank of colonel.

Dr. J. M. Emmett,

Clifton Forge, has been appointed by Governor Battle to the Board of Visitors of the University of Virginia for a four year term ending February 28, 1954. He succeeds the late Dr. Hugh H. Trout of Roanoke.

The American Congress of Physical Medicine

Will hold its twenty-eighth annual scientific and clinical session August 28—September 1, inclusive, at the Hotel Statler, Boston, Massachusetts. Scientific and clinical sessions will be given and all sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, the annual instruction seminars will be held August 28, 29, 30 and 31. These seminars will be offered in two groups. One set of ten lectures will consist of basic subjects and attendance will be limited to physicians. One set of ten lectures will be more general in character and will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapy Technicians or the American Occupational Therapy Association.

Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

Winchester Memorial Hospital.

At the monthly Staff Conference of the Hospital on February 15, Dr. George G. Finney, Associate Professor of Surgery in the Johns Hopkins Medical School, Baltimore, spoke on "Management of Lesions of the Breast". The conference was attended by approximately fifty (50) physicians from Winchester and the surrounding territory in Virginia, West Virginia and Maryland.

Dr. William Minor Deyerle,

Richmond, has successfully passed the examinations and has been certified as a diplomate of the American Board of Orthopedic Surgery.

Dr. Fletcher L. Raiford,

Formerly of Franklin, is now at the North Carolina Baptist Hospitals in Winston-Salem, North Carolina, and is an assistant resident on the Pediatric Staff.

The Philadelphia County Medical Society

Will hold its Fourteenth Annual Postgraduate Institute at the Bellevue-Stratford Hotel in Phila-

delphia, April 25-28. Among the subjects to be covered will be Pediatrics, Virus Diseases of the Skin, Antibiotics and Chemotherapy, Management of Inoperable Malignancy, Rehabilitation, Carcinoma of the Prostate, Problems of Adolescence, Epilepsy, Gastrointestinal Hemorrhages, Obstetrical and Gynecological Problems, Geriatrics, Fractures, and Arthritis. There will also be two special evening sessions at the hotel one consisting of a Clinical Pathological Conference and the other dealing with problems of Alcoholism.

Arrangements are being made to record the material presented in the Question and Answer Period following each lecture and a summary of this material will be made available to each paid registrant. The registration fee is $10.00 payable in advance or at the time of registration. The usual variety of high grade technical exhibits will be part of the meeting. Programs may be secured by writing to Gilson Colby Engel, M.D., Director, 301 South Twenty-first Street, Philadelphia, Pa.

The Virginia Section, American College of Physicians

Met in Richmond, February the 22nd, with a splendid attendance. The program was of a high type and, in addition to local speakers, had as its guest speaker at the dinner session, Dr. Reginald Fitz of Boston, President of the American College of Physicians. Officers of the Virginia Section are: Dr. J. Edwin Wood, Jr., Charlottesville, Governor for the State; Dr. Douglas G. Chapman, Richmond, chairman and Dr. James F. Waddill, Norfolk, secretary-treasurer. Dr. Charles M. Caravati was chairman of the Program Committee.

A New Medical Journal.

A medical journal devoted to a highly specialized branch of medical science, made its appearance at the beginning of this year. Its title is FERTILITY AND STERILITY, with a sub-title of Official Journal of the American Society for the Study of Sterility. The editor is Pendleton Tompkins, M.D., of San Francisco; with a number of imposing names on the Editorial Board, as well as on the list of Foreign Correspondents.

It comes from the press of Harper and Brothers, New York, and will be published bi-monthly.

In his introductory remarks the Editor takes occasion to say: "Paradoxically almost, it is the large number of journals now available which justifies this new one; investigators in narrow fields find it impossible to cull from tens of thousands of papers those pertinent to their interests". He mentions the obligation men working in this field rest under to veterinarians, with their abundant breeding records, their frequent autopsies, and carefully compiled statistics. And he says: "It is our duty to discover not merely how more people, but finer people can be bred".

Dr. Tompkins is a son of Dr. and Mrs. E. P. Tompkins of Lexington.

The Pennsylvania Academy of Ophthalmology Otolaryngology.

The annual meeting of the Academy will be held May 12-14th, at the Bedford Springs Hotel, Bedford, Pennsylvania. Among the speakers will be Drs. Edward H. Campbell, Frank D. Costenbader, Karl M. Houser, Raymond E. Jordan, John E. L. Keyes, Francis L. Lederer, Irving H. Leopold, Maurice Saltzman, Richard G. Scobee, Edmund B. Spaeth and Frank B. Walsh.

In addition to the formal presentations, twelve Study Clubs will be conducted, to run concomitantly with the scientific sessions. There will also be an open forum, an "Information Please" type of session with the topics "Refraction Difficulties in Presbyopia" and "Common Office Procedures in Otorhinolaryngology".

Dr. Daniel S. DeStio of Pittsburgh is president of the Academy and Dr. Benjamin F. Souders of Reading secretary.

Dr. E. L. Sikes

Of Pound has been named a Kentucky Colonel, by Governor Clements of that State. Dr. Sikes lives in a county adjoining Letcher County, Kentucky, and he has been closely associated with people of that section of Kentucky.

The Staff of the Radford Community Hospital

Radford will hold its annual invitational Clinic Day on Thursday, July 20. This will be the sixth such meeting—these having begun with the establishment of the present hospital. There will be two guest speakers—names to be announced at a later date.

The present Officers of the Staff of Radford Com-

munity Hospital are: Dr. A. F. Giesen, President; Dr. C. R. Duncan, Vice-President; and Dr. J. F. Chairsell, Secretary-Treasurer.

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OBITUARIES

Dr. Charles Lester Harshbarger,

Norton, one of the most prominent and popular physicians of his section, collapsed when he was in the midst of an operation on February 21, and died in less than an hour. Dr. Harshbarger was born at Weyers Cave in January 1896 and graduated from the Medical College of Virginia in 1929. Upon completion of his internship, he located in Pearisburg, but moved to Norton in 1932 and purchased the Norton General Hospital. At the time of his death he was the President of the Wise County Medical Society. He was also connected with a number of professional and civic organizations and had been a member of the Medical Society of Virginia for nearly twenty years. He is survived by his wife and a daughter.

Dr. Edmund Wainhouse Poulson Downing,

For more than half a century a practicing physician in Northampton County, died at his home in Franktown, February 28, at the age of 89. He was a graduate of the College of Physicians and Surgeons of Baltimore in 1886. Dr. Downing was a member of the "Fifty Year Club" of the Medical Society of Virginia and was also a member of the Northampton County Medical Society. His wife and two children survive him.

Dr. John Doherty Hinchman,

Richmond, for a number of years a prominent physician in this city, died February 23. He was sixty-six years of age and graduated from the Medical College of Virginia in 1907. He was a member of the Richmond Academy of Medicine, the Medical Society of Virginia, and the Richmond Academy of General Practice. He is survived by his wife and two daughters. A brother is Dr. F. E. Hinchman of Richmond.

Dr. James Gideon Brown,

Woodville, who had practiced medicine in that section for fifty-six years, died at his home on February 15, at the age of 82 years. A native and lifelong resident of Rappahannock County, he was graduated from the University of Pennsylvania Medical School in 1889 and had been a member of the Medical Society of Virginia for many years and was a member of its "Fifty Year Club". His widow and several children survive him.

Dr. William Augustus Baker,

Big Stone Gap, died February 7, at the age of 87. He was a graduate of the Louisville Medical College in 1891 and had practiced to last summer. He had served several terms in the Town Council and had always shown an active interest in civic affairs. He was a member of the "Fifty Year Club" of the Medical Society of Virginia. Surviving are his wife and three children.

Dr. Charles Wesley Pritchett.

The following resolutions were adopted at a recent meeting of the staff of the Memorial Hospital of Danville:

WHEREAS, it has pleased Almighty God to remove from us our friend and fellow-physician, Dr. Charles Wesley Pritchett;

WHEREAS, his untiring service to the people of Danville, Virginia, and the surrounding area over a period of more than half a century was and shall be an inspiring example to all those who knew him;

WHEREAS, he was ever alert for any opportunity to improve the services of the medical profession, and kept himself abreast of the advances in the field of medicine despite his years;

WHEREAS, his personal life was an inspiration and an example to all who knew him, especially those who worked closely with him in practice of medicine;

NOW, THEREFORE, BE IT RESOLVED:

First, that we express our gratitude to the Great Physician for this noble life, stretching across more than fourscore years, and remaining in active service until the end;

Second, that we pledge to each other our renewed efforts in trying to realize and maintain the high standards in our profession which he represented;

Third, that we record our sense of loss to our profession, our city, and to ourselves individually, in his going.

STAFF OF THE MEMORIAL HOSPITAL
W. E. OVERCASH
J. J. NEAL
E. B. ROBERTSON

Henry Woodfin Phillips.

Doctor Henry Woodfin Phillips was born in Norfolk, October 10, 1875, and the fifty-three years he devoted to the practice of Medicine were spent in this community.

His education was begun in the parochial schools of Norfolk after which he attended Rock Hill College, Maryland, and Virginia Polytechnic Institute. His medical education was pursued at University College of Medicine, in Richmond, from which he graduated in 1897. After graduation, for a number of years, he served with marked proficiency as physician and surgeon to the large establishment of the John L. Roper Lumber Company at Gilmerton, Norfolk County.

After discontinuance of his work at Gilmerton, he located in Norfolk City, where by reason of his exceptional medical skill, and his kindliness of spirit and manner he acquired a host of devoted and loyal patrons, who already keenly lament their loss.

One of us who has known Doctor Phillips from his early childhood and who has been intimately associated with him in his professional work, has observed his skill, his patience and his magnanimity of soul.

He was a Member of Sacred Heart Catholic Church, Norfolk County Medical Society, Medical Society of Virginia (in which he was a member of the Fifty Year Club), and Seaboard Medical Society, and was past Assistant-Surgeon of the Sons of the Confederacy.

He was nearly always present in Society meetings and we shall sadly miss his genial face and kindly greetings.

THEREFORE, BE IT RESOLVED, that in the death of Dr. Phillips, the Norfolk County Medical Society has sustained the distinct loss of one who characterized himself as a general practitioner.

BE IT FURTHER RESOLVED, that this brief tribute be incorporated in the records of the Society, and that a copy be sent to his family, and also one to the VIRGINIA MEDICAL MONTHLY.

GEORGE A. RENN
A. D. MORGAN
N. G. WILSON, *Chairman.*

Dr. Fayette Allan Sinclair,

Born December 3, 1881, a native of York County and a Newport News physician since 1916, died January 22, 1950, at his home, after a long illness. He was a graduate of the College of William and Mary, and in the year of 1904 graduated from the Medical College of Virginia. He volunteered for service with the army in World War I and served overseas for a year as a surgeon. He practiced medicine in York County for five years before coming to Newport News. He was also surgeon for the Chesapeake and Ohio Railway Company for approximately twenty years.

Dr. Sinclair was a member of the Riverside Hospital Staff, Warwick County Medical Society, Medical Society of Virginia, Peninsula Medical Association, American Legion, Veterans of Foreign Wars, Trinity Lutheran Church and other fraternal organizations. He was widely known throughout the Peninsula for his work in charity cases. He is survived by his wife, a brother and two sisters.

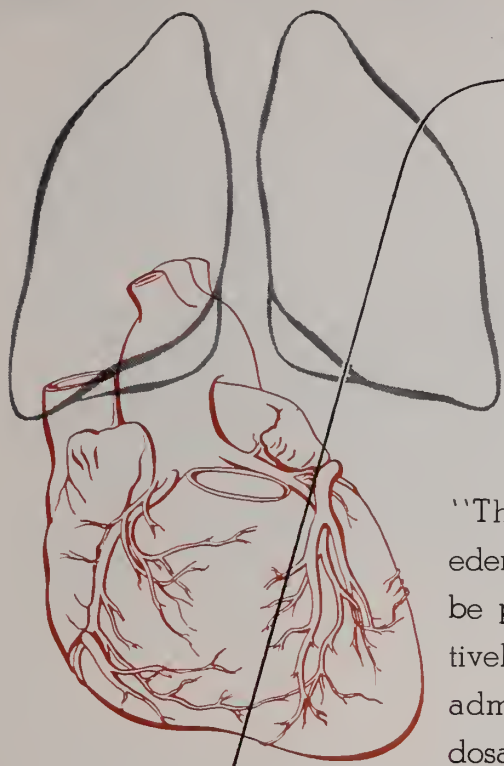
The following resolutions were adopted by the Riverside Hospital Staff:

BE IT RESOLVED that his death has brought a feeling of genuine sorrow and a great personal loss to the Riverside Hospital Staff and to his host of friends throughout the state. As a physician and soldier he was outstanding, and his kindness and personal magnetism endeared him to all and it can in truth be said of him that "None knew him but to love him, none named him but to praise", that his community has lost a valuable citizen and the medical profession a well beloved physician.

That the Riverside Hospital Staff wishes to express to his family, their sincere sorrow in his death.

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to his family, *The Daily Press,* the Peninsula Medical Association, the Warwick County Medical Society, the VIRGINIA MEDICAL MONTHLY, and be recorded in the minutes of the Riverside Hospital Staff.

J. HUGHES MABRY
W. S. SNEAD
Chairman.



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1. Barach, A. L.: Edema of the Lungs, Am. Pract. 3:27 (Sept.) 1948.

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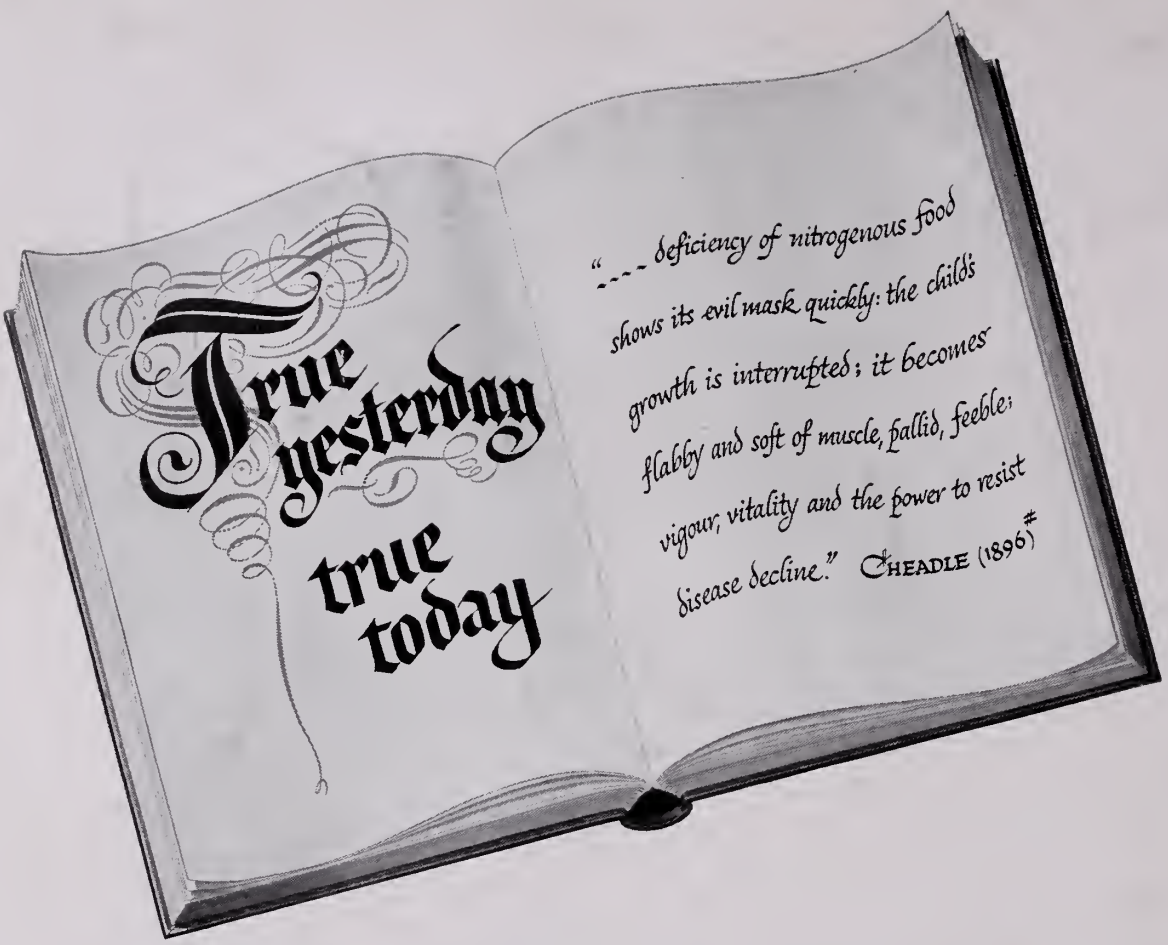

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#Cheadle, W. B.: Artificial Feeding of Infants, 1896; Cited by Clements, A. D.: M. J. Australia 2:404, 1946.

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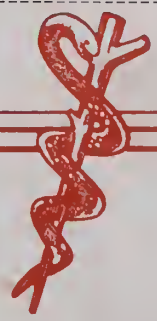

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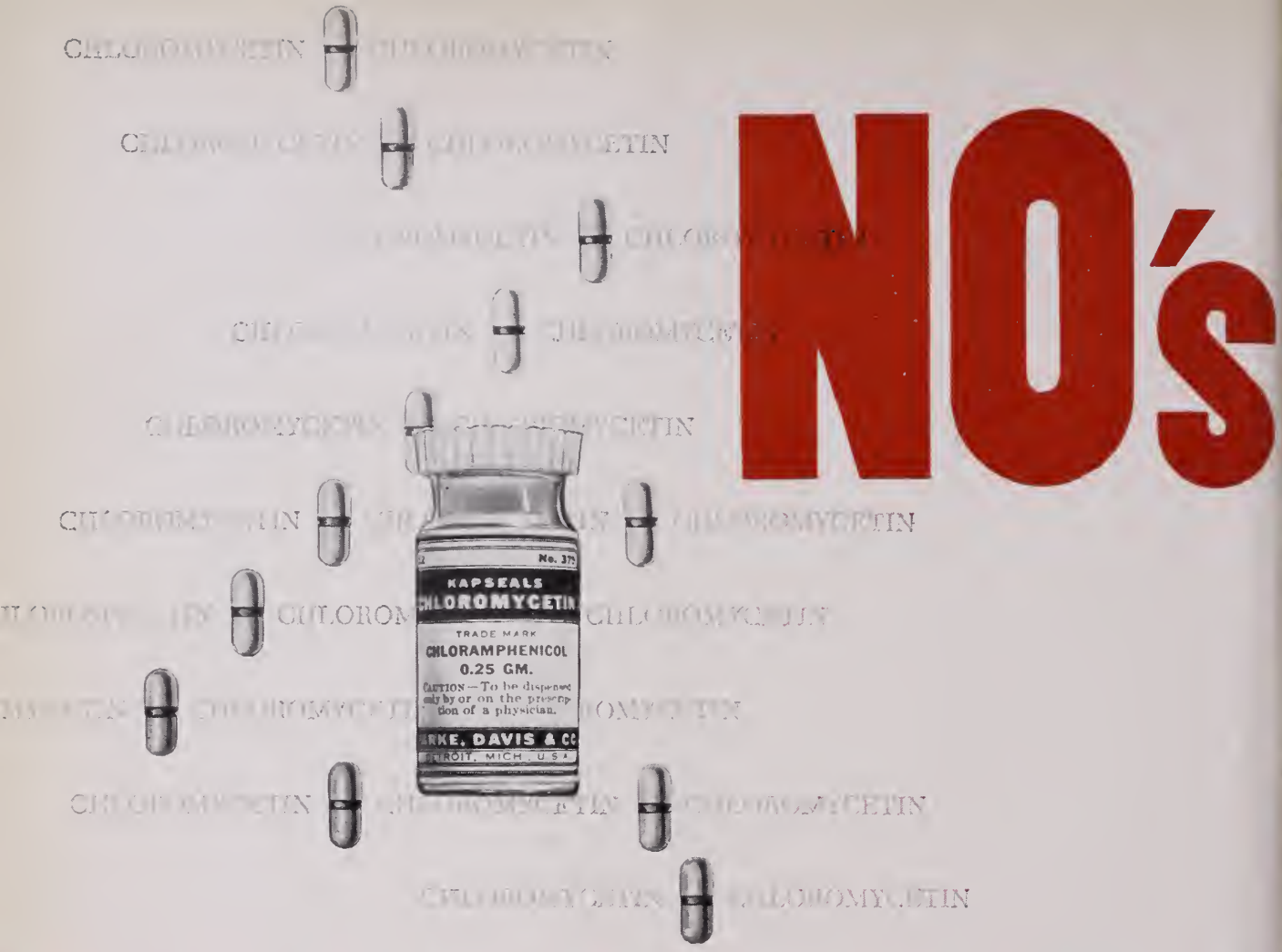

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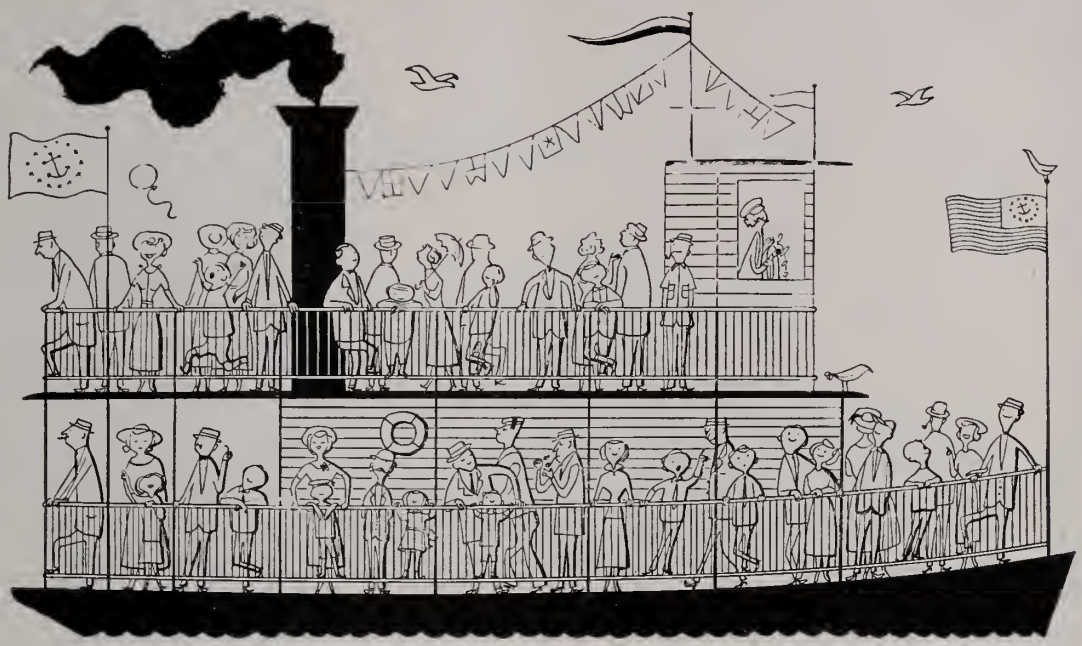

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GUEST EDITORIAL

THE PHYSICIAN AND BLUE CROSS

IT became apparent shortly after the depression in 1929 that some change was necessary in our plan in this country for hospitalization of ill patients. The initial attempt to form a pre-payment care plan was made at the Baylor University in Texas in 1932 and this proved to be the start of what is now known as the Blue Cross hospitalization plan. Shortly thereafter, numerous studies were made by various groups and gradually the pre-payment plans were grouped together under the single name of Blue Cross which today signifies a non-profit hospitalization plan which is particularly designed to cover the cost of hospitalization for the low income group. It is not the purpose of this paper to discuss the advantages or disadvantages of the Blue Cross Plan as opposed to commercial hospitalization insurance plans. Each has its place and each tends to supplement the other and it is to the advantage of the physician and to the hospital to advertise, not only the Blue Cross, but all good commercial hospitalization insurance plans.

It is the aim of the Blue Cross plans to provide complete hospital coverage at low costs for a limited time to its contract holders. Its members are secured by voluntary enrollment and pre-pay their hospital care by monthly or yearly installments and do not cover any physician's service except those provided in the hospital by the pathologist. Because it is the aim of the Blue Cross Hospitalization Plan to provide care for low income groups, the cost by the month is purposely low and for this reason it is impossible for the Blue Cross to pay large commissions to salesmen or to set aside large sums for advertising. This brings up the first responsibility of the physician to the Blue Cross, namely, the advertisement of the plan to all of his patients. Each physician should take it upon himself to inquire of all patients whether they are familiar with any hospitalization plan, whether they are enrolled in any pre-payment hospital care plan and to insist that those in the low income group join the Blue Cross. Each doctor should preach pre-payment hospital and medical care to all of his contacts in various walks of life, particularly to civic organizations and other groups who may be interested. Each doctor should know or have available some of the facts about his local group such as its services and cost and should be able to inform any patient as to the name of the plan and the name of the Director with phone number and office address. It is apparent that if every physician could spend even a few minutes daily with each of his patients and advise him or her as to the desirability of belonging to a voluntary pre-payment medical or hospital plan, it would not be long before there would be an enormous increase in the enrollment in all of the hospital and medical care plans throughout the country.

Further responsibility of the physician lies in curbing the abuses of Blue Cross Hospitalization. It goes without saying that in providing low cost care, the rate paid to most hospitals is under the usual hospital charge. For this reason each day that a patient is

in the hospital under the Blue Cross auspices is to some extent a financial burden to the hospital and it will be necessary to obtain income to cover the costs of his hospitalization from other sources. In addition, each day that the patient remains in the hospital there is an increased cost to the individual hospital plan and it is only through the efforts of the physician in charge that patients can be discharged early if they have hospitalization coverage. Even though these plans have been in effect over 17 years, the actuarial figures are far from being entirely known and until the plans are set up on a firm actuarial basis it is the responsibility of each physician to see that his patient is not hospitalized needlessly and does not remain in the hospital a day longer than is necessary.

If the physician has a responsibility to the Blue Cross, the Blue Cross has a responsibility to the physician and it is suggested that in each area the executive director of each local hospital plan or someone delegated by him, visit each physician in the community regularly so that the physician can be made familiar with the plan and its advantages. A few hours each week spent by a Blue Cross representative seeing the doctors could iron out many difficulties of opinion both for hospital plans and for medical care plans and it is only in this way that complete cooperation can be secured.

There is no doubt that the greatest single force in this country that has been set up to combat governmental control of medical care is the voluntary pre-payment hospital and medical care plans. All authorities are agreed upon this fact. It behooves each physician who is interested in the future development of medicine to study his local plan to see its advantages and its short comings and to work through the Blue Cross and Blue Shield so that we can continue to be independent of governmental control.

RUSSELL BUXTON, M.D.,
Newport News, Virginia

Floral Eponym

Dodartia

DODART, DENIS 1634-1707

DODART, an eminent French physician and botanist, was born in Paris in 1634, and died there in 1707. As a student, he excited the praise of Guy Patin, which is praise indeed, for Patin rarely spoke well of anyone. He said that Dodart was a prodigy of wisdom and of science, and at another time, he said of Dodart, that he was wise and modest, and knew his Hippocrates, Galen, Aristotle, Cicero, Seneca and Fernel by heart. Dodart practiced in the highest circles of Society, and held the chair of pharmacy in the Faculty. His studies in the history of plants brought him membership in the Academy of Sciences.

Dodartia is an erect perennial herb, related to Mimulus.

STREPTOMYCIN IN TUBERCULOSIS, ITS USE AND ABUSE*

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Blue Ridge Sanatorium,
Charlottesville, Virginia.

During the past several years, streptomycin has been undergoing intensive evaluation as a therapeutic agent in the fight against tuberculosis. This process of evaluation has been a most difficult one because of certain peculiarities of the disease. Regardless of how treated, tuberculosis tends to undergo spontaneous periods of progression and slow regression. Fortunately, in most instances, the body shows a natural tendency for eventual healing, unless the infection is overwhelming in degree or the body resistance utterly lacking. One must not be too hasty, therefore, in concluding that any one factor contributed entirely to the patient's recovery. Rather we must realize that the recovery occurred because of a combination of many factors. In the light of recent studies, however, it appears that streptomycin may act as one of these influencing factors, and that we may now consider the drug to be a valuable adjunct to our present therapy of the tuberculous.

At the outset it must be stated that there is still no unanimous opinion as to how streptomycin can best fit into the treatment program of tuberculosis. Problems relating to indications for use, dosage schedules, and duration of administration are still open to some argument. Since the intensive use of this anti-biotic was started at Blue Ridge Sanatorium in early 1947, we have had an opportunity to learn many things concerning its value and limitations. This knowledge has been acquired at the expense of admitted errors in proper use and some disappointments in results. To date, we have given streptomycin to approximately 300 sanatorium patients, 196 of these having received the drug between July 1, 1948, through June 30, 1949. Of those patients discharged during this same twelve month period, approximately one out of every four had streptomycin while in the Sanatorium. Although some of our patients have been able to purchase the drug, most have not been able to do so. Up to July 1, 1948, many were able to receive streptomycin because of generous donations from the Virginia Tuberculosis Association. Since July 1, 1948, a State appropriation has provided the drug for those unable to pay for it. In general, we feel that there has been some benefit derived by most of these patients, and that the considerable cost of such treatment has been more than justified.

In selecting cases for treatment, there are certain considerations to be mentioned briefly. Streptomycin in its various available forms has been repeatedly shown to affect chiefly the *exudative* component of the tuberculous lesion. There is less effect upon the lesion after actual tissue destruction has occurred, as is seen in the fibro-caseous pathology existing in the more advanced stages of the disease. This effect on the tuberculous lesion appears to be brought about mainly by a bacteriostatic rather than a bacteriocidal action on the part of streptomycin. Thus, the drug alone cannot be expected to eradicate the infection. Moreover, this bacteriostatic effect on the tubercle bacillus is merely a temporary one, due to the fairly rapid development of bacterial resistance to the drug. Ordinarily enough resistance has developed by the 60th day of treatment to definitely reduce the effectiveness of further administration. It is probable that this bacterial resistance is permanent, abolishing the chance of future good response to streptomycin.

Drug toxicity, especially vertigo, was once a troublesome factor in the use of streptomycin, but this has been greatly minimized with adoption of smaller dosage and with the newer dihydro form.

With the above facts in mind, it would appear that we should chiefly reserve streptomycin treatment for those instances in which there is likelihood of putting the disease under control within the relatively short period of two months total administration. In order to accomplish this goal, it is practically always necessary to use other treatment methods jointly, such as collapse measures and corrective surgery. If one uses the drug alone in hoping to control the disease, it is apt to bring disappointment and sometimes disastrous results.

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, Va., October 9-12, 1949.

Pulmonary Indications

As have other investigators,[1,2,3,4] we have found streptomycin to be one of the greatest value in conjunction with collapse treatment of the lungs. By using it for short periods of one to two weeks before and after starting artificial pneumothorax or pneumoperitoneum, we have been able to induce such collapse measures sooner in the more acute forms of tuberculosis, with fewer toxic and pleural fluid complications. Likewise, we have been able to perform successful thoracoplasties on a number of poor risk patients, especially those with active, unstable disease in the contra-lateral lung. Previously many such patients never became safely operable in spite of prolonged periods of strict bed rest. It is *not* our feeling, however, that streptomycin should be *routinely* used with all forms of collapse, even thoracoplasties. Rather, its use should be reserved for those cases carrying more than the usual amount of treatment risk.

In those occasional cases of pulmonary tuberculosis requiring lung resection (i.e., lobectomy or pneumonectomy), streptomycin has proven to be of great value in reducing post-operative spreads of disease and empyema.[5]

If collapse therapy or chest surgery is not contemplated, it is probably wise to withhold streptomycin in most cases, pending a fair trial on bed rest. Exceptions are those with acute exudative or pneumonic disease having considerable febrile toxicity. Also, diabetics with acute lesions often need the help of streptomycin, as these individuals have a low resistance to tuberculosis. It should be realized, however, that in these instances the end result may be poor unless the drug treatment is promptly followed up by more permanent treatment measures.

Extra-Pulmonary Indications

1. *Tracheobronchitis*: Wider use of bronchoscopy has revealed that this is a frequent complication of pulmonary tuberculosis. Its presence may greatly interfere with the performance and results of collapse therapy. The development of wheezing, x-ray evidence of atelectasis and the persistence of an unexplained positive sputum are suggestive of endo-bronchial involvement. The administration of streptomycin for a four to six week period will often put the condition under control, though it is our experience that it may later recur unless the underlying lung lesion improves.

2. *Laryngitis*: This formerly painful, and often fatal complication has shown good immediate response to streptomycin. However, as in the case of bronchitis, there are frequent recurrences in those with uncontrolled lung lesions.

3. *Generalized Miliary Tuberculosis and Meningitis*: Our experience in this condition, though limited, has shown that streptomycin may occasionally cure, but more often merely prolongs the patient's life.

4. *Miscellaneous Tuberculous Conditions*:
   a. Enteritis
   b. Sinus tracts
   c. Bones and joints
   d. Genito-urinary tract

The immediate results in all these conditions have been good in our experience. However, it must be remembered that whenever tuberculosis develops in an extra-pulmonary location, it is usually the result of a co-existing lung involvement. In such cases, unless the lung is taken care of, there is considerable chance that the extra-pulmonary focus may recur, even in spite of seemingly good initial response.

Although streptomycin produces some temporary symptomatic improvement even in the most extensive cases, palliative use should be avoided as often as possible. Many advanced, seemingly hopeless cases of pulmonary tuberculosis eventually get in shape for thoracoplasty through prolonged bed rest. These people often need the protection of streptomycin at the time of operation, and should not be made drug resistant by needless previous administration. There is some evidence, too, that those individuals who keep a positive sputum after prolonged streptomycin therapy may possibly infect others with their strains of drug resistant bacilli, rendering them hazardous both to their families and to hospital personnel.[6]

The dihydro form of streptomycin has been found far less toxic than the older forms, and is to be preferred except for the *intrathecal* treatment of tuberculous meningitis. We have found a daily dosage of one gram to be satisfactory in most cases, given in two intramuscular injections of 0.5 gram each, approximately twelve hours apart. More than one gram daily, except in cases of meningitis and gen-

eralized miliary involvement, has not given us any better results.

Our earlier cases were treated by giving the drug for periods of 90 to 120 days. However, it appears that this is unnecessary. By using properly timed short courses, better results can usually be accomplished within a total of 60 days. With the use of such short courses of administration, the total effective use of streptomycin can be considerably prolonged. After a 60 day period the patient is probably drug resistant anyway, making longer administration either useless or much less effective.

SUMMARY

Streptomycin is a valuable drug in treating tuberculosis. It should not, however, be considered as a definitive treatment, but should be used in conjunction with other recognized and established forms of therapy. Since there is a definite limitation to the period of response, it is essential that the administration of streptomycin be properly timed in the treatment program if best results are to be achieved. The mere existence of active tuberculosis *per se* is not an indication for the giving of streptomycin. Indiscriminate use of the drug is to be condemned, as it may deprive the patient of a necessary aid in his future recovery.

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DISCUSSION

DR. E. C. DRASH, Charlottesville: We have been interested in the surgical aspects of tuberculosis and the use of streptomycin. Dr. Apperson has pointed out some very important things regarding its use. As you know, the general public has become cognizant of streptomycin as a drug in the treatment of tuberculosis through the efforts of Paul de Kruif and other writers. I am sure that the pressure on the family doctor to use the drug for a patient waiting to enter a tuberculosis sanatorium must be terrific. The patient and his family probably request the use of streptomycin; but, as Dr. Apperson has pointed out, this may be disastrous if the doctor is influenced by the wishes of the family.

The price of streptomycin is also a factor. When it first came out the price was five dollars a gram. Those who got it then were those who could afford to pay for it, plus a few carefully selected patients who got the drug at State expense. Now the price is one dollar a gram, and the drug is available to practically everyone who needs it and some who do not need it. As Dr. Apperson pointed out, it is of great value in conjunction with collapse treatment of the lungs; and it is of great value in poor-risk patients on whom it is desired to do some form of surgery. We have seen a number of patients who under ordinary circumstances would have been completely inoperable but who have been made operable by the use of streptomycin at the proper time. We have seen other unfortunate individuals who received streptomycin unwisely and upon whom we were not able to operate because they had become streptomycin-resistant.

I think Dr. Apperson has wisely emphasized in his paper that the diagnosis of tuberculosis does not make streptomycin mandatory. I think we must all be on our guard to give streptomycin only when it is clearly indicated and not at any other time. Since streptomycin has become so cheap, relatively, and since it has become generally available the pressure to use it has become considerable, even in the sanatoria. There are many far advanced and hopeless cases who beg their physicians literally day after day for streptomycin in the hope that it will do something for them. I hope as we learn more about streptomycin it will be replaced by some more effective drug and that its use will be limited to those cases in which it is clearly indicated.

DR. APPERSON, closing the discussion: I wish to thank Dr. Drash for his comments. There is really nothing to add except to say that we are more apt to err if we give our tuberculous patients streptomycin than if we withhold it. The average case will get well without it. So I think in most cases we should withhold streptomycin unless indications are clearly cut for its use.

POLIOMYELITIS: RESPIRATORY EMBARRASSMENT*

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and
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Respiratory embarrassment will occur in those patients who are having some difficulty in breathing, resulting from the infection of poliomyelitis. Before understanding respiratory embarrassment in such a patient one has to be familiar with the causes that may produce the symptoms of difficult respiration.

The causes of difficult respiration are many. Among these are a disturbance of the muscles of breathing which results in difficult respirations through the weakness or paralysis of the intercostal muscles and the diaphragm. The diaphragm on inspiration extends into the abdomen, therefore producing a vacuum within the thorax, resulting in expansion of the lungs. A weakness or paralysis of the diaphragm fails to bring about this expansion.

The intercostal muscles which elevate the ribs, increasing the capacity of the thoracic cavity when weakened or paralyzed, results in diminished breathing through lack of expansion of the lungs.

Spasm or tightness of the diaphragm and intercostals will interfere with the contraction of these muscles, and therefore renders diminished breathing.

Involvement of the respiratory center will interfere with breathing from failure of normal impulses extending from the center to the muscles of respiration.

Other causes of difficult breathing may be due to obstruction in the pharynx.

Among these are paralysis of the muscles of deglutition which will allow an accumulation of mucus and saliva in the pharynx preventing air to flow freely into the lungs.

A paralyzed tongue of a patient lying on his back will fall to the rear of the mouth and bring about obstruction.

Abductor paralysis of the muscles of the larynx allowing the cords to approximate will produce an obstruction to breathing.

When there is an accumulation of mucus and saliva in the pharynx, it will initiate a spasm of the larynx which will tend to prevent the saliva from passing into the trachea, at the same time will cause an obstruction to the passage of air.

Obstruction in the trachea is brought about by the aspiration of mucus and saliva, sometimes vomitus.

Atelectasis diminishing the amount of lung tissue available for the exchange of oxygen and carbon-dioxide is due to the accumulation of mucus or secretions blocking the small bronchioles.

Pneumonia when present may be due to the bacteria which have been aspirated from the pharynx.

Pulmonary edema developing in the alveoli due to hypoxia also produces obstruction to breathing.

Another factor bringing about difficult respiration is in the central nervous system where there has been an interference with the blood supply to the nerve cells of respiration by interstitial edema.

Fear can be a contributory cause as it may produce panic in some patients. As a result breathing may become difficult due to the hysterical manifestations.

Sedation when given to a patient to quiet him has at times deadened the reflexes of the respiratory center to such an extent that it may result injuriously to him. The center which may be depressed through hypoxia can be further depressed through sedation.

An individual showing a low hemoglobin or anemia may also show signs of impaired breathing. Dehydration or malnutrition due to vomiting or lack of fluids or both will also interfere with respiration.

Involvement of the circulatory center by the polio virus resulting in impaired circulation will affect respirations.

Those cases showing difficult breathing will usually have cell destruction of specific areas of the central nervous system. When the diaphragm and intercostal muscles are involved the pathology is located in the anterior horn cells of the cervical and thoracic area of the cord.

The respiratory center, circulatory center and the center of deglutition are located in the medulla or the so-called bulbar area. Pathology occurring in

*Read at the annual meeting of the Medical Society of Virginia, at Fort Monroe, October 9-12, 1949.

this area will bring about a disturbance of these centers.

The etiology of the cell destruction in the cord and medulla of acute poliomyelitic cases is due to several factors.

The poliomyelitis virus entering into the nerve cells by way of the axons produces a destruction of the cell.

The destruction of these cells brings about an inflammatory reaction which consists chiefly of edema and leucocytes. The edema and accumulation of cells through compression may result in asphyxia or destruction of the nerve cells.

When there is faulty oxygenation of the blood with failure of oxygen reaching the nerve cells, further cellular degeneration will take place as a result of the lack of oxygen or hypoxia.

With an understanding of the causes and the pathology which brings about respiratory difficulty in the poliomyelitic patient one is better able to treat the patient.

One must be able to recognize the symptoms which indicate respiratory embarrassment.

Respiratory muscle weakness or paralysis can be detected by limitation of the respiratory excursions. They are slow, irregular and shallow. There is some shortness of breath which can be demonstrated by asking the patient to count rapidly.

Limitation of the respiratory excusion can be brought about in a cooperative patient by asking him to take a deep breath. Upon attempting inspiration one will notice that the chest will not have its normal expansion if there is intercostal paralysis.

When the diaphragm is not paralyzed the abdominal wall will rise on inspiration which is brought about by the contracting diaphragm crowding the viscera into the abdomen. When there is paralysis the diaphragm will be sucked into the thoracic cavity on inspiration with sinking of the abdominal wall. When a child will not cooperate by taking a deep breath, weakness of the diaphragm can be demonstrated by splinting the chest with one's hands, requiring the patient to breathe with his diaphragm alone. If desirous of demonstrating weakness of the thoracic muscles, splinting of the abdominal muscles with the hands will force the use of the thoracic muscles for inspiration.

Cerebral symptoms such as somnolence, restlessness, anxiety, mental confusion are early symptoms of hypoxia.

Increased rate in breathing, dilatation of the nostrils, a slight respiratory grunt and a disinclination to talk will indicate that the patient is having further respiratory difficulty. Cyanosis from respiratory muscles weakness is a late sign and should not be allowed to occur.

When the respiratory center is involved, there has developed an irregularity of rhythm and depth of respiration. The respirations tend to be shallow and occasionally there are prolonged intervals between inspirations. The patient may take a deep breath. Prolonged periods of apnea may occur and finally respirations cease. These respiratory symptoms have occurred despite strong intercostal muscles and a strong diaphragm.

Due to the presence of hypoxia these patients are extremely anxious and apprehensive. They require frequent reassurance to calm them. They have fears and are confused.

Ultimately the temperature and pulse may increase or decrease. The blood pressure may be elevated or may fall due to shock. In fatal cases they develop cyanosis which can not be relieved by adequate oxygenation.

Symptoms due to paralysis of the muscles of deglutition are easily recognized by pooling of the saliva in the throat, the patient being unable to handle these secretions by swallowing. These secretions may be very profuse, obstructing the air passage. Occasionally weakness of the tongue, which may be unilateral or bilateral, upon dropping back into the throat may impair the movement of food through the mouth or impede the expectoration of saliva.

Obstruction of the airway can result from the aspiration of the saliva into the larynx and trachea or by reflex spasm of the glottis to prevent the accumulation of fluid into the trachea.

Lesions of the tenth or vagus nerves, which innervate the muscles of deglutition, may also produce disturbance of the vocal cords. The abductor paralysis which may develop will produce a stridor due to the approximation of the vocal cords and, if severe, may produce sudden asphyxia and death.

Nasal speech can be detected in some cases and upon examination soft palate paralysis can be demonstrated.

In the treatment of respiratory embarrassment oxygen can be of value in those cases where there

are mild respiratory symptoms. The use of oxygen by tube or tent has given the patient relief and may carry him over a period of time preventing him from going into the respirator.

The use of the respirator should be used as soon as it is recognized that it may be a benefit to the patient. This is often demonstrated by putting the patient in a respirator and watching for evidence of relief and comfort. Relaxation and sleep is justification for placing the patient in the respirator.

The success of the use of the respirator depends upon the relief the respirator gives a patient. The respirator should be synchronized with the patient. The speed of the respirator should be set for a rate agreeable to that of the patient. The patient should be watched over a period of time to see that he is not straining against the respirator but is relaxing and breathing with it. Sometimes when the patients are first put into the respirator, on account of fear or nervousness, they are unable to relax and will breathe against the respirator. Soon they will adapt themselves if the respirator is properly synchronized and the air passages are free of obstruction.

When the patient cannot be synchronized with the respirator there are usually disturbances such as obstruction in the respiratory tract or respiratory center involvement initiating respiratory efforts.

Maintaining an unobstructed airway is of first importance in the care of the respirator case.

When there is obstruction in the pharynx due to an accumulation of mucus, resulting from a pharyngeal paralysis, a tracheotomy should be performed. Symptoms that justify a tracheotomy are a progressive difficulty in swallowing with accumulation of the secretions in the throat, along with mental changes such as apprehension, anxiety, and confusion.

The presence of spasm of the larynx due to the irritation of the accumulated secretions of the throat or to paralysis of the abductor muscles of the larynx allowing the cords to approximate are justifications for a tracheotomy.

A tracheotomy when done should be with as little trouble to the patient as possible. Some physicians have advocated slight general anesthesia but local anesthesia should suffice. If the patient is more or less in extremis, a breathing tube may be inserted into the larynx and trachea so there will be no obstruction to the passage of air and the operator may take his time in doing a satisfactory operation.

Following the operation the shunting of air directly into the trachea produces a certain amount of irritation which will stimulate the drying of the secretions of the air passages. The dried secretions in the trachea and bronchi may become so extensive that it will bring about obstruction to breathing. This can be remedied somewhat by allowing humidified air to flow through the tracheotomy tube as it will have less drying effect.

Oxygen when used should also be humidified. It can be used under slight pressure when there is partial obstruction by the mucus.

In cases of pharyngeal paralysis with the accumulation of mucus and saliva in the pharynx the patient in the respirator is kept with the head lower than the feet so that the mucus accumulating in the pharynx will not be aspirated into the trachea. This mucus is partially blocked by the tracheotomy tube and there will not be the suction on the mucus that there would be otherwise. The patient's head may be turned to the side so that the accumulative mucus will flow into a basin or towel.

Aspiration is helpful and may be carried out in these cases to relieve the pharynx of the accumulated mucus. Aspiration should not be carried out unless necessary, when the patient cannot remove the mucus of its own accord. Care should be taken in the use of the aspirator. Too rough or careless use of the aspirator within the pharynx will produce irritation and discomfort and the benefits the patient derives will be diminished. Too violent use will produce much gagging, resulting in vomiting complicating the clinical picture.

Careful aspiration of mucus through the tracheotomy tube may also be carried out. A soft catheter may be pushed in through the opening into the trachea. Suction should be applied during expiration so as not to interfere with the air going into the lung. Keeping the air passages open is the desired treatment.

There are cases where a patient has been placed in the respirator due to respiratory center paralysis. In some of these cases it has been observed that where the patient fails to synchronize with the respirator the patient either breathes between the respiratory excursions of the respirator or with or against the respirator. Following a tracheotomy these patients have assumed the rhythm of that of the

respirator.

A few cases will show failure of circulation due to involvement of the circulatory center. In these cases the patient takes on a dusky appearance. The pulse rate is out of proportion, from 50 to 200, with an elevation of temperature. The pulse is thready, the rhythm is irregular, blood pressure varies, may be elevated but begins to fall at failure of the circulation. Restlessness and anxiety are present as the circulatory failure appears. The pulse becomes imperceptible and the skin becomes cold and clammy and shows a mottled cyanosis. These cases usually show delirium, coma with hyperthermia. As for treatment, none seems to be of any avail.

Hydration of the patient should be carried out so that the mucus in the larynx or trachea will not become too viscid. In a well hydrated patient the mucus in the trachea will be moist so that it will not produce an obstruction in the respiratory tract. Parenteral fluids should be administered as needed. Electrolyte and fluid balance should be kept up. It is not necessary to use amino acids or the hydrolysates unless the patient is vomiting.

After the patient has settled in the respirator with or without tracheotomy, gavages have been quite successful and when properly done the patient can be fed without any vomiting. Some observers think that gavage feedings should be put off for several days on account of the possibility of vomiting. If a tracheotomy has been performed the inserted tube will more or less close off the trachea so that the patient's vomitus does little harm.

Complications that may arise are many in the treatment of the case in the respirator.

Obstruction of the trachea and bronchi with secretions such as dried and viscid mucus may cause a great deal of trouble. It can be prevented by gentle aspiration with a small soft rubber catheter during expiration.

An expectorant to keep the mucus thin so that it will not be viscid can be prescribed. Expectorants that act less on the vomiting center are the best. Fluids forced is a good expectorant.

Humidification of the air or oxygen that the patient is allowed to breathe will diminish the drying effect.

Atelectasis is a frequent complication and is produced by the smaller bronchioles plugging up with secretions. Treatment is to prevent the occurrence of this obstruction. Suction through the aid of the bronchoscope has given some relief.

Bronchopneumonia can occur when pathogenic bacteria have been aspirated into the lungs with the secretions of the pharynx. The use of the antibiotics penicillin and streptomycin have been used advantageously for prophylactic treatment.

Pulmonary edema can occur, usually terminally, and may be prevented by the prevention of hypoxia. It is thought that the diminution of oxygen is the cause of the edema. Removal of the causes that bring about hypoxia comprises the treatment. A collapse of the lung can be due to a complete blockage of the bronchi.

Subcutaneous emphysema has occurred when the respirator has been used with too great a pressure. Through hyperventilation of the lungs with the use of the respirator, alkalosis and tetany have been produced. A more careful use of the respirator will prevent these conditions from arising.

If treatment has been successful during the acute stage of respiratory embarrassment, the patient soon passes over to the convalescent stage and in due time, depending upon amount of residual paralysis, is weaned away from the respirator or the tracheotomy tube or both.

DISCUSSION

DR. EDWARD S. RAY, Richmond: I know it is a disappointment to this audience that Dr. Pembleton is unable to be here to discuss this paper and I share this disappointment.

As Dr. Sutton has so well stated the cells of the central nervous system that are already damaged by the poliomyelitis virus are very susceptible to further damage if anoxia occurs. Therefore, adequate oxygenation of the blood should be a part of the therapeutic regime of each case of this disease.

Bulbar involvement when only the upper cranial nerve nuclei are involved creates no real threat to the patient's life. However, when the lower cranial nerves become involved a very definite threat does exist. The most frequently involved cranial nerve is the tenth which innervates the soft palate, the muscles of swallowing and the vocal cords. As a result of this paralysis there is an accumulation of saliva and other discharges from the upper respiratory tract in the pharynx, which is readily aspirated into the trachea since the patient is unable to swallow; attempts to feed such a patient, of course, increase the volume of material available for aspiration into the tracheobronchial tree. Weakness of the vocal cords frequently results in stridor with strong inspiratory efforts which tend to draw foreign material into the

trachea and increase the obstruction to the airway; in addition, the increased respiratory effort with the increased negative intrapleural pressure will literally suck edema fluid into the interstial tissues of the lungs with further interference with oxygen exchange. By keeping the airway open in these cases by frequent aspiration of the pharynx, by postural drainage, and by feeding through a nasal tube as outlined by Dr. Sutton, adequate respiratory function can be maintained in most cases and anoxia of the C.N.S. kept to a minimum.

It should be emphasized that such cases when placed in a respirator will usually aspirate a greater amount of material into the trachea because of the "sucking" power of the respirator. When the respirator is necessary in cases that are unable to swallow it is usually wise to perform a tracheotomy. There is a modification of the head of the respirator that allows for adequate care of the tracheotomy tube when the respirator is necessary.

Bronchoscopy is occasionally necessary when secretions accumulate in the tracheo-bronchial tree and may be life saving when atelectasis is present. However, bronchoscopy always produces a certain amount of trauma to the bronchi and there may result an increase in the secretions within the bronchi—a bronchorrhea, so to speak —which is difficult for these patients to cough out.

These cases of bulbar involvement require the constant care of specially trained nurses. Keeping the pharynx free of "pooled" secretions and keeping the tracheotomy tube clean require frequent and expert attention. Such should be delegated only to those well trained in these aspects of nursing care.

I would like to ask Dr. Sutton if actual involvement of respiratory center isn't rather infrequent, and if the major respiratory difficulties that he encounters are not due in the great majority of cases to the involvement of the lower cranial nerve nuclei.

DR. SUTTON, closing the discussion: I want to thank Dr. Ray for discussing the paper.

About forty per cent of our respiratory cases, I imagine, are true cervical and thoracic involvement; that is, the respiratory center is not involved. It is hard to say when the respiratory center is involved when there is lower nerve involvement. The deduction of the respiratory-center involvement is due to irregularity in breathing and symptoms of anoxia. However, you may get the very same picture in paralysis of the deglutition muscles. It is, therefore, very difficult to say definitely how many respiratory-center cases there are in the series.

Recommend Routine Use of Smear Test in Cancer Examination of Women.

Routine use of the smear test in gynecologic examinations of women for cancer is recommended by Drs. Hannah L. Peters and William L. Madden of the University of Rochester School of Medicine and Dentistry, who describe a study of 200 women. (J.A.M.A., March 4).

In this series of consecutive gynecologic patients examined for cancer, three cases of cancer were primarily discovered through use of the smear test, the doctors say.

(The test developed by Dr. George N. Papanicolaou of Cornell University Medical College, New York, for diagnosing early cancer of the cervix and uterus is described by him as "a technique for collecting cellular debris, smearing it upon glass slides and staining it so that the various components may be studied.")

"More and more women are coming to the gynecologist's office for a 'cancer check-up'," the Rochester doctors say. "Yearly examinations are being requested. In these cases, cervical smears should be taken as part of the complete examination.

"The staining and examination of the slide is a laboratory procedure and should be in the hands of a person trained in cytology [study of cells]."

THE COMPLAINT OF "FORGETTING" FOLLOWING ELECTROSHOCK

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It is common experience with the after-effects of electroshock that a certain degree of "forgetting" is experienced by the patient. This "common experience" is extremely variable from patient to patient. In some, one or two electroshocks will produce profound lapses of memory; while, in others, 10 to 15 treatments do not seemingly affect the memory to any noticeable degree. The material forgotten may be limited in its retrograde expression, such as not recognizing the immediate episodes which resulted in hospitalization, or, it may be even more selective, involving certain small details of the past. The past is only one temporal section in which the disturbances are found, for not infrequently it involves current, newly associated material. If one is allowed to quantitate the "forgetting" process it may be evaluated between the extremes of a slight hesitancy in the recall of names to a profound disturbance of associations with the present and past. There is another influence of time on the process following electroshock; it is common experience to expect this particular after-effect of treatment to diminish as the time interval increases between the present time and past treatment. Yet one hears of difficulty in remembering being a complaint years after a series of shocks.

The word "forgetting" is used specifically in preference to other applicable words for the following reasons: (1) "forgetting", "to forget", "loss of memory", "can't remember", and "memory is bad", are the common terms, though by no means all of them, which individuals use to describe the condition they observe in themselves and which they relate to electroshock. Therefore, a word derived from "to forget" comes closer to expressing the ordinary viewpoint of the patient than the more technical one of amnesia which is associated in professional terminology with specific references to organic disturbances and to psychological disturbances. (2) As will be seen in the subsequent paragraphs there are two processes involved in forgetting related to the treatment. One will be called patho-physiological because it is concurrent with the experience of having the electrical current applied to the brain. The other is called psychological because it relates to associational factors which are well known and have been studied without the complicating experience of this treatment.[1] It is of this psychological process the patients mainly complain. It is here that the psychologically determined lapses of memory and the complaints of "forgetting" after electroshock meet on common grounds.

The bulk of the clinical material deals with an investigation of the psychological processes. This being true, it will be necessary to say a word or two relative to the formulation of these. When a person is asked to recall a certain event or name, or is placed in such a position that, without direct enquiry, recall is expected of him, the observer has to take several things into consideration. It is possible the material is brought into consciousness but factors inherent in revealing the material to another person are such there is a denial of the recalled material. To the other person it would seem this primitive mechanism of denial is usually activated to avert disagreeable feeling tones. The ideas, "I don't know", or "I forget", suggests these replies are avoidance of disagreeable feelings associated with criticism, the arousal of anger, or affective reactions associated with embarrassment, all being complex on an associational plane. A second consideration is the activation of the mechanism of repression in which forgetting is an automatic denial to consciousness of material existing within the unconscious and, under special circumstances, can be brought into consciousness. In this condition the repressed material is again associated with unpleasant effect, either directly connected to the material or associatively connected. In this process we see the opposite condition obtaining to that found in "slips of the tongue"[1] where the forces producing the slip outweigh the repressive forces. The repressed material may be brought into consciousness by recalling an associational link in the associational chain which is not too heavily laden with repressing forces or by having the repressed material spoken by an observer where it is known.

One of the defects in this clinical investigation is that an evaluation of the forces causing forgetting following electroshock cannot be controlled. If, for example, a name is forgotten after electroshock, we do not know whether the name could have been re-

called before treatment or not. It is only through coincidence we will be able to obtain data relative to such specific forces. The impression one obtains is that so far as the patient is concerned, the forgetting of a name or incident following treatment is an unusual and unexpected condition which was not previously present. This, of course, may not be true. An attempt has been made by some observers to surmount this difficulty by giving the person to have electroshock certain words to remember before treatment,[2] recall of which is requested following treatment. One criticism of this method is that standardized words may or may not be associatively connected with denial and repressing forces. A result of this would be forgetting from the lack of emotional ties to past events. Contrarily, the words may be associatively connected, producing an active associational chain of thoughts, but these may or may not be associated with denial and repressive forces. "Forgetting", as it is recognized in this paper, is an active process.

CLINICAL MATERIAL AND DISCUSSION

It is common experience to meet with a patient weeks or months after electroshock who complains of difficulty in recall of names well known to him. This observation may be determined simply by talking to relatives of a patient, an example of which is as follows: a minister, unknown to the writer, was given electroshock for what seemed, by the informant's relation, to be an agitated depression. The informant, the minister's son, and an astute physician, made the remark, "Father got over the electroshock nicely, except he has difficulty in remembering names. We tease him about this. So far as I can tell he is not bothered by anything else."

This selectivity of forgetting has all the earmarks of an active repressive process on a psychological plane, as opposed to a patho-physiological condition produced by electrically stimulating the brain. In order to test this hypothesis out, observations were made on several patients.

An intense, dark-eyed young nurse was placed in attendance on a young girl of about the same age who was suffering from an acute psychosis resembling mania. Unknown to the staff physician who arranged for her nursing care, the two young ladies had met before at another hospital when this patient was suffering from a similar psychotic episode. The nurse began her duties early one morning and when they saw each other the patient recognized the nurse's face but not her name. The nurse introduced herself as Miss O. . . . Following this the patient was given an electroshock, of which, in the days preceding, she had had six.

The patient was interviewed two to three hours following this seventh electroshock and was asked to recall her nurse's name. Her reply, taken down as verbatim as possible was to the effect: "I hated everything at Blank hospital, and I've tried to forget everything there. That's the reason I can't remember her name". She recalled the name of the supervisor at Blank hospital (checked as correct by the nurse), and then continued about the supervisor and her nurse, "I liked her (the supervisor). She was not as nice as my nurse, but my nurse has a temper. She lost her temper with me once. I didn't want to stay at Blank hospital. She said I should be ashamed of myself. Her eyes get real black when she gets mad."

She was then given three names in the order below with the question: "Is your nurse's name "Roberts?" . . . "No"; "Johnson?" . . . "No"; "O . . ." "Yes".

The patient was then questioned about her present illness. She was able to recall in detail the events leading to her hospitalization on this particular occasion. When asked to recall the electroshock she had just had that morning, she was able to describe vividly the application of salt paste to her forehead and an injection into a vein in her arm. This latter was curare. She could not remember anything immediately following the injection.

In the course of relating the above material note was taken of a slip of memory relative to her ward physician. This gentleman had seen a great deal of her in the time she had then been on the psychiatric ward. There was little reason to expect she did not know his name, and, as a matter of fact, she did. However, she was not asked to recall his name but rather to express an opinion as to why she could not remember it. To this she stated, "He has on glasses and has monkey eyes". The observation about "the glasses" was certainly correct and one can have empathy with the idea he has "monkey eyes". No further associations were obtained but the trend indicated a derogatory evaluation of her ward physician and one would expect other associations showing an unpleasant, hostile feeling for a person whom his associates regard as kind and tolerant.

In commenting on these observations one finds the name of the patient's nurse associated with unpleasant effect, recall of which occurred when the name was spoken. The name of the supervisor was also associated with unpleasant effect but not nearly so intimately as the nurse's. In forgetting the ward physician's name we come upon a control situation in that the forgetting seems to be associatively connected with acute attention paid to the "language of the eyes". Her ability to recall detailed historical material and also events leading up to her seventh electroshock of three hours previously would seem to indicate that the electroshock had little, or perhaps nothing, to do with the forgetting of these names. On the contrary the associational material would indicate an active process of repression just as it is experienced in ordinary life situations and has been widely studied.[1] The immediate loss of consciousness occurring with the advent of the electrical current would indicate, at that point, a complete amnesic period on a patho-physiological basis but of limited duration.

The patho-physiological effect may be illustrated by another case. This patient was a woman obsessed by the thought that she had done something to her son. She was brought to the hospital because she had had periods of crying and impulsive behavior. She was given one electroshock and during an interview which occurred 5 days later, she was asked to tell the story of this single treatment. As in the case above, she was able to recall vividly the placement of electrodes and injection of curare. The next thing she remembered was a short time later, the exact time being unknown to her. She said, "The first thought that popped into my head was about my son. He has a nervousness like mine and if there is anything in this world I don't want him to be like, or have, is me and my nervousness. He sleeps coiled up like me." There was no complaint of memory loss and none could be demonstrated.

In evaluating the conditions of forgetting in this particular episode one can say the single electroshock produced only an amnesic period due to a patho-physiological state induced by the electric current. This state was short-lived and produced no sequellae which can be attributed to it. The preoccupations which the physicians wished her to forget, and for which the electroshock was administered to her, were first and foremost when the patho-physiological condition wore off. During the interview this woman had no lapses of memory such as the case above.

Two questions arise at this point. Common experience with forgetting after electroshock indicates great variability. As was noted at the beginning of this paper it varies from slight hesitancy in recall to bizarre amnesic periods. In the second case presented here the forgetting seemed to be associated with unpleasant emotional tones, having as a focal point the eyes. The 7 electroshocks did not seem to have an undue influence on the process of forgetting and in the third case the patient awakes with the same disturbing ideas she had before her single treatment. The first question is, does the type of illness have anything to do with the prominence of forgetting after electroshock? The second question is, are the associational factors of importance? The following case lends itself toward solving these two questions.

An unmarried, exceedingly paranoid woman of 39 years of age, had been ill for a number of years. She had received electroshock with some benefit in January, 1948, but was returned to the hospital in September 1948 because an overt rejuvenation of paranoid ideas had gradually made her incapable of adjusting in her social milieu. At the time of the interview reported below she had received four electroshocks. Her comments are as follows: "I have been trying to remember a man's name all week. Those electroshocks sure erase things from your memory." On questioning the patient, she was loath to answer details about the man but did give the following information:

He was: (1) blond
(2) stout but not fat
(3) he had taken her out to a dinner and dance
(4) she could not remember whether he had attempted to kiss her or not
(5) in winter he was a coach for a high school
(6) in summer he was a scout for the Giants (N.Y.) baseball team
(7) the man and the patient's roommate got along well, "She can have him for all I care."

It is unfortunate we did not know of the existence of this man before treatment so that a control situation could have been established. It is also unfortunate no data was obtained as to why she was

desirous of recalling this man's name. In spite of these defects several observations are possible.

This woman was very paranoid. We have no overt evidence that her condition was based in homosexual conflicts but we do have considerable historical evidence she rejected heterosexual activity beyond the point of casual dating. Physicians responsible for her welfare interviewed her with the idea of obtaining some statements from her about her sexual life. She would give none and they were thrown back on the more devious route of interpreting her symbolic behavior to get at this side of her life. The material presented in the interview above coincides with these attempts at interpretation of her sexual life. It will be noted in item four, she did not remember whether he had kissed her or not. This may be a denial of remembered material as mentioned earlier. In item seven, we find a somewhat ambivalent attitude but emphasis is definitely on rejection of the man. It carries a hostile implication. This would seem to give a clue to the repressive forces which deleted his name from her memory. This is that his name is associatively connected with unpleasant affect. Certainly her rejection of him in item seven, the failure of positive recall of sexual ideas in item four and the forgetting of his name, taken with the historical evidence of rejection of heterosexuality are all consistent.

Four months after the series of electroshocks she was interviewed again. She was reminded of the interview above, given all the data relative to this man as outlined and she was asked to recall his name on this occasion. Her comments, taken down verbatim, were as follows: "He sounds like a familiar person to me. Let's see. I don't seem to remember him though. Ruby O'd . . . was my roommate in B . . . She was dating a fellow. What was his name? Oh, yes. It was Bill J . . . Now it comes to me. The fellow you described was Taylor S . . ." It is plain the associational link was picked up at the point of her roommate. There was difficulty, again, in remembering a man's name but it broke through the repressing forces, and carried with it the name forgotten during electroshock.

During the course of our first conversation it was noted she forgot the word for the treatment she was getting, namely, electroshock. On questioning her she recalled the name and stated, "I don't mind them *but* . . . It's all right to have someone's brains shaken up as long as it isn't mine. I'll keep on taking them if you think they'll do me good." Here again the forgetting seems to be on a basis of association with an unpleasant procedure.

From the foregoing it would seem electroshock, as an empirical treatment, can be applied with greatest success where the capacity for repression is implicated, and where associational material contains disagreeable affect which the patient desires to deny to consciousness. The first question can be answered in this fashion: Patients with manic depressive psychosis, particularly the depressive phases, receive greatest benefit from electroshock because of prominent repressive forces and the disagreeable effect in the associational material. Under these conditions it becomes understandable how electroshock, if it is of aid in other psychiatric conditions, operates. The patient with the marked paranoid element indicated electroshock aided repression and the examination indicated the direction it worked in. This formulation would tend to explain why electroshock is of relative value only in schizophrenia, for it is in this condition that repression is often most defective. The question raised about the importance of associational material is, of course, answered affirmatively.

In the discussion just above a statement was made which has received all too little consideration in psychiatric literature. This statement was the "desire to repress". This desire is encountered very frequently in such statements as, "I wish I could forget that", "Will that thought ever go away", and "When anything starts worrying me I get to work around the house and forget it." This desire to forget was well illustrated by a woman who suffered from an agitated depression. Her illness began and progressed from the time a sheriff came to her home looking for her son, a minor town official, to serve a warrant for his arrest. He was being arrested on charge of suspicion of embezzlement of the town's funds. He was allowed to post bail and was not confined to jail. The patient could not get his predicament off her mind and no matter how much she protested she knew, with his positive assurance, that he was innocent, she continued to be agitated. She was given electroshock with some improvement, but not complete recovery, for she continued to have insomnia, epigastric distress, anorexia, and multiple painful somatic areas. She was seen about one month following discharge from the hospital. About the time of her treatment the son had been exonerated

of the embezzlement charge. During the interview one month following discharge, her husband, who accompanied her, remarked he had tried to talk to her once about the son's experience but she would not let him. At this point in the interview, the patient flared up angrily, "I certainly will not, I have forgotten all that." It seems obvious repression was desired but had not taken place. Since the empiricism of electroshock is still an outstanding feature, one can only theorize about failure of repressive forces and continuation of her illness.

One of the not uncommon resultants of electroshock is a state of confusion in which disorientation is present. This state of affairs varies from difficulty in maintaining orientation to complete disorientation with marked hallucinosis. The following patient received seven electroshocks, which produced, during the height of his confusional state, disorientation for person and place, euphoria when being conversed with, but if left alone he had little contact with anyone. His illness had been ushered in six years previously by "stomach trouble", and during the height of his confusional state he went two days without eating. We were prepared to tube feed him but prior to trying it we gave him a glass of tube feeding to drink. He took the material in his mouth, gargled, and spat it out, saying that he could not swallow. He was encouraged to try harder to swallow and he succeeded. This advantage allowed us to discontinue our plan to tube feed him.

Approximately two weeks following the height of his confusional period he was interviewed about it. He told the following chain of events. Before he came to the hospital he told his wife he thought (he meant to say—hoped) she would be able to visit him. She did come at the end of the first week, just before electroshock was begun. To continue in the patient's words, "during treatment everything seemed to fade out except the idea my wife came to visit me. That idea would come and go. Dr. P . . . told me she had not been to see me (Dr. P . . . had been away and did not know of her visit). I thought it was just to test me. Then one day shortly after treatments had stopped I was looking at an old dirty shirt I had been wearing and came to the collar which had lipstick on it. When I saw that it was just like a book opening up to me. I knew my wife had been here and my whole memory came back."

We do not know enough about this man's psychological relationship to his wife (and mother) to understand the significance of this thread of memory running through his entire period of confusion, culminating in a dramatic restitution of memory when he saw the symbol of her presence. Clinging to the memory of her visit would appear to have a parallel in one relation he gave us about his wife and himself. He found, when he was unable to sleep and suffered from acute anxiety symptoms at night, that if he got his wife to put her arms around him he became so much at ease he could drop off to sleep almost immediately. If this is symptomatic of his attitude towards his wife, that is, that she is a guardian angel like a mother, we can understand why she is not associated with unpleasant affect and why her memory was preserved through the confusional period at the expense of others.

This case, representing one of the major memory and behavior disturbances following electroshock, concludes the presentation of case material. No attempt has been made to satisfy all the conditions which might be regarded as important for gathering and establishing proof of conclusions against argument. The summary given below, however, seems to fit the material presented.

Following electroshock, patients notice a distinct failure of recall of certain elements to their consciousness, which they designate as "faulty memory". It is also observable that certain elements are remembered in spite of marked confusion or the desire to forget. Stated in psychological terms, the observation of the ego is the recognition of repression in operation, which, by contrast, is more pronounced than before electroshock. It is equally true that the ego recognized failure of repressive force whether the ego desired repression to take place or not. From this investigation it would appear that "forgetting" is not a hit or miss proposition. Instead it would appear to be correlated with specific psychological forces which have to be determined by investigation of the individual case, although, in general, the presence of unpleasant associational material seems to determine the "forgetting". The persistence of elements in memory cannot at present be ascribed to an opposite or pleasant associational affective toning.

Forgetting appears in two relative phases. There is an immediate loss of all associations, past and present, due to the pathological physiological conditions set up by the electric current. This is recog-

nized by every patient. The prolonged effect, where noticeable, is psychological. The material presented does not indicate the connection between the two phases, nor reason why electroshock is such an effective agent to bring about "forgetting".

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Acne Yields to Simple Treatment.

Acne can be cleared up or greatly improved by a simple program of treatment, an acne research project carried out at the University of Cincinnati College of Medicine shows. Local treatment and simple advice from a physician can bring about rapid improvement and frequently effect a complete cure, says Dr. Helen Dexter of the Department of Dermatology and Syphilology of the college in the March 11 Journal of the American Medical Association.

"In the 100 cases studied, age of onset varied from 9 to 32 years and duration of the disease from one month to 24 years," Dr. Dexter reports.

"Significant aggravating factors were found to be dietary and cosmetic habits; the way a patient customarily leans his face against his hand; emotional tension; a few drugs taken for other conditions, and occupational contact with oil and grease.

"The patients were advised on these matters. As a general rule, dietary restrictions were limited to chocolate, the cola drinks and excessive use of nuts and heavily fried foods.

"Local therapy consisted of day and night applications of hot lather two times in succession, followed by a cold rinse. Resorcinol [an antiseptic substance], sulfur and alcohol in a flesh-tinted, nongreasy base was applied once or twice a day. The soap recommended for use by the patient depended on the type of skin.

"With this treatment, the acne was arrested or greatly improved in all cases."

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia which are available to our readers under usual library rules:

Advances in surgery. Vol. 2, 1949.
Boss—Meaning and content of sexual perversions.
Chatton—Handbook of medical management.
Crile—Practical aspect of thyroid disease.
Fairhall—Industrial toxicology.
Flynn—The road ahead.
Fulton—Aviation medicine in its preventive aspects.
Goldsmith—The road to penicillin. A history to chemotherapy.
Grubbé—X-ray treatment. Its origin, birth and early history.
Linksz—Physiology of the eye. Vol. I. Optics.
McClellan—The neurogenic bladder.
Riggins and Hinshaw—Streptomycin and dihydrostreptomycin in tuberculosis.
Riley—Essentials of gynecologic endocrinology.
Rolnick—Practice of urology. 2 vols.
Sullivan—Conceptions of modern psychiatry.
Thorek—Modern surgical technique. 4 vols. and index.
Upham—A dynamic approach to illness.
Veith—Yellow emperor's classic of internal medicine.

TREATMENT OF GENERALIZED MILIARY AND MENINGEAL TUBERCULOSIS WITH STREPTOMYCIN AND PROMIZOLE—REPORT OF A CASE

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Tuberculous meningitis with or without the association of miliary tuberculosis has until recent years been considered a hopeless disease from the therapeutic standpoint. With the use of streptomycin a number of greatly improved or cured cases are being reported. However, in the follow-up study of such cases the outlook is still a poor one. The Streptomycin Committee of the Veterans Administration[1] reported on 260 cases of miliary and meningeal tuberculosis in October, 1948. Of the first 100 patients with bacteriologically proved diagnosis treated between March, 1946, and May, 1947, only 24 were alive in April, 1948. Of the 43 cases of tuberculous meningitis there were nine survivors and of the 35 with combined miliary and meningeal disease there were only three survivors.

Lincoln and her co-workers[2] have reported the use of promizole in the treatment of miliary tuberculosis. Three out of eleven cases showed complete recession of X-ray evidence and were alive thirty to thirty-three months after the first treatment. Six had been treated less than six months and were doing well and two had died forty-three days and four and one-half months after the beginning of therapy. Five patients with tuberculous meningitis were treated with promizole but died in from six to twenty-five days after the beginning of therapy without evidence of retardation of the disease. Because of the apparent beneficial effect of promizole in miliary tuberculosis and because of the need for a relatively non-toxic drug which could be administered over a long period of time, they reported[3] the use of streptomycin and promizole in the treatment of tuberculous meningitis in children. Of seven such patients treated one died in two months. The other six were living at the end of three to eight months.

A patient of mine with generalized miliary and meningeal tuberculosis was treated with streptomycin and promizole with survival from February to June and autopsy evidence was noted to show a rather remarkable degree of healing of the tuberculous process. This patient is being reported in detail because of the gross and microscopic findings at autopsy and their relation to the mode of therapy used.

OBSERVATIONS ON HEALING OF TUBERCULOUS MENINGITIS

Baggenstoss, Feldman and Hinshaw,[4,5] in a study of the effect of streptomycin on the pathology of generalized miliary and meningeal tuberculosis reviewed eight fatal cases. They found that definite histologic evidence of healing was present in six of the eight cases. By healing they meant the occurrence of fibrosis and hyalinization and the absence of caseation in the miliary tubercles. The regressive changes did not appear to follow the usual pattern of encapsulation of a cellular or caseous central mass but represented rather a diffuse even fibrosis of the entire lesion. This suggested that the healing had occurred so rapidly that the usual sequence of central caseation and peripheral encapsulation did not have an opportunity to develop. The regressive changes in these lesions resulted in the formation of irregular fibrotic scars with rough or angular borders rather than the typical more nearly spherical lesions of the primary complex of the lungs and hilar nodes, hematogenous lesions of the kidneys, prostate, adrenal glands and bladder and especially the brain. The healing was definite in the lungs, liver, and spleen. The comparatively minute lesions healed best whereas the larger lesions showed less effect. The concentration of streptomycin was determined in various human tissues and fluids secured at autopsy. There was a significant concentration of streptomycin in the spinal fluid but it was completely absent from the brain. Adcock and Hettig[6] also found that the brain was virtually free of streptomycin. Corper,[7] in a bacteriological study of the various phases of the use of streptomycin in tuberculosis, pointed out many of the difficulties in obtaining controlled studies of the action of streptomycin in tuberculosis. In his study of experimental virulent infection, streptomycin did retard tuberculosis but could not prevent a lethal issue of the infection.

Alperin and Toomey,[8] in a report of 9 cases of

tuberculous meningitis treated with streptomycin (none cured at time of report, two showed good clinical response) stated that the tuberculous process is often initially seeded in the brain as well as in the meninges. They felt that the absence of streptomycin and of evidence of healing in the brain substance make apparent the poor prognosis and eventual poor outcome of patients with tuberculous meningitis.

REPORT OF A CASE

This 34 year old married female with two children was seen on January 23, 1948, at which time she stated that she had been well and in good health until May, 1947, when she was awakened by pain in the left lower chest which was sharp and cutting and hurt when she took a breath. Her temperature was 103° to 104° F. She was ill for a period of five to seven weeks, during which time she lost about 25 pounds in weight. This illness was called a virus pneumonia but no chest X-ray was taken. She had been feeling well since, except for a slight feeling of soreness in the left chest and a non-productive cough. Two weeks before I saw her she had chills and fever and was in bed for four days. A week before she was nauseated and vomited. Since then she complained of malaise and a dull ache in her chest.

Physical examination showed a thin female who weighed 118 pounds. Her oral temperature was 100.6° F. Examination of the chest revealed at the left lung base posteriorly dullness on percussion, diminution of breath sounds and a few fine crackles. Examination of the heart revealed the pulmonic second sound to be accentuated. There was a systolic murmur over the pulmonic area. Complete physical examination was otherwise within normal limits. Roentgenographic examination of the chest showed a homogenous density from the lung base to the level of the fourth rib on the left. A diagnosis of pleural effusion was made and the patient was admitted to the Virginia Baptist Hospital on January 25, 1948. Laboratory findings revealed the urinalysis to be normal with the exception of a trace of albumin. The hemoglobin was 93% (Sahli), erythrocytes 4,600,000, leucocytes 5,000 and differential count of the leucocytes revealed 75% polys, 18% small lymphocytes and 7% monocytes. Sedimentation rate was 38 mm. in one hour (Wintrobe tube). A diagnostic thoracentesis of the left pleural space was performed on January 26 and 30 cc. of straw colored fluid were removed. Culture of the fluid was negative. Differential smear revealed that the fluid contained 98% lymphocytes and 2% polymorphoneuclear leucocytes. Part of the fluid was injected into a guinea pig which died about two weeks later, but due to an error no autopsy was performed on the guinea pig. During the hospital stay from January 25 to February 6 she ran a low grade fever for the first five

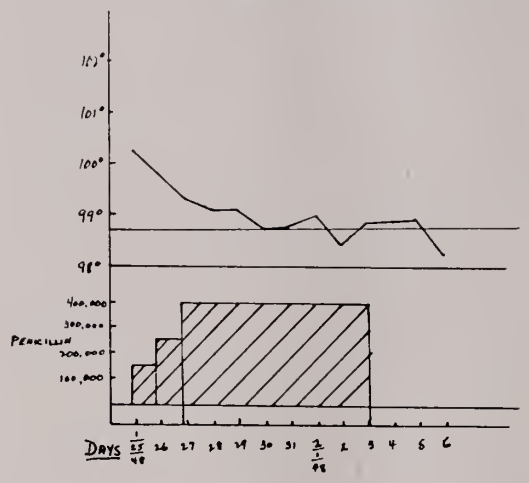

Fig. 1.

days (Fig. 1) with normal readings being obtained thereafter. Because of a repeatedly positive serologic test for syphilis she was given 50,000 units of penicillin every three hours. On February 6 roentgenoscopic examination revealed a very small amount of fluid which just filled the costophrenic angle of the diaphragm on the left. The final diagnosis was pleural effusion, which was probably tuberculous in origin. The patient was sent home to continue with complete rest in bed. She was next seen on February 13 at which time she stated that she was not feeling so well. Her temperature was 100.8 F. Her weight was 116½ pounds. Hemoglobin was 70% of normal. She was given 300,000 units of penicillin in oil and wax daily for the next three days, but, since she remained febrile with the temperature ranging from 101° F. to 103° F. daily, she was readmitted to the hospital for streptomycin treatment on February 19. A complete physical examination at this time showed the only positive finding to be slight diminution of breath sounds at the left base. She complained of some abdominal pain, pain in the lower back, in the right hamstring muscle groups and in the left calf. No positive findings were noted in regard to this. Hemoglobin was 75%,

erythrocytes 3,950,000, leucocytes 6,700, polys 85%, small lymphocytes 10% and large lymphocytes 6%. Sedimentation rate was 36 mm. in one hour. Streptomycin therapy was instituted with 200 mg. being given every three hours. On February 23 a lumbar puncture was performed because of headache, a beginning nuchal rigidity, and a temperature ranging from 99.8° to 103.4° F. The spinal fluid was slightly milky in appearance and contained 342 leucocytes per cubic mm. 95% were lymphocytes and 5% were neutrophiles. Total protein was 520 mg. per 100 cc. of fluid. Wassermann was negative. Colloidal gold curve was 1111222111. A guinea pig was inoculated with this fluid but died in twenty-four hours of peritonitis. The presumptive diagnosis of tuberculous meningitis was made. Further spinal fluid findings are as shown in Table I. It was noted at this time that she was unable to void spontaneously and required repeated catheterization to prevent bladder distention. Her neck became very stiff and she complained of blurred vision and severe headache which was poorly relieved by medication. She developed a urinary infection with albuminuria and pus cells graded as +4 on the basis of 1 to 4 (1 being the least and 4 being the greatest). Culture showed a coliform organism which was not identified further. Cystoscopic examination was done by Dr. S. H. Rosenthal who found numerous cystic blebs in the trigone, the base of the bladder and in portions of the vault. A few of these had ruptured, leaving superficial ulcerations. I.V. pyelograms showed no abnormality of the kidneys. The temperature of the patient was as noted in Figure 2. On March 5 the patient was noted to have persistence of nuchal rigidity, a sense of numbness from the waist down, a general hyporeflexia and equivocal bilateral Babinski signs. She had a marked polyuria and also some blurring of vision. The fundi were entirely normal and the muscle balance seemed normal without presence of a squint. On March 8 promizole (Fig. 2) 2 grams daily by mouth was begun. The urinary infection was treated with mandelamine, penicillin, sulfadiazine and bladder irrigations in addition to streptomycin at various times during her hospital stay. From March until the time of death she complained of pain radiating anteriorly from the thoraco-lumbar area. This was considered to be a nerve root pain related to the

TABLE I
SPINAL FLUID

Date	Cell Count	Differential	Chlorides	Sugar	Protein	Culture	Guinea Pig
2-23-48	342	Polys 5% Lymph 95%			520		
2-27-48	23	Polys 23% Lymph 77%	532 mg.	22.0 mg.	1000	Neg.	
3-12-48	Spinal fluid xanthrochromic 7	Polys 15% Lymph 85%		18.5 mg.			Neg. autopsy 6 wks.
3-30-48	191				6120		
4-3-48	Cisternal Tap 97				120		
4-5-48	S.F. Xanthrochr. 286 Cist. Tap 224				4200 138		
4-14-48	312	All lymphs					
4-22-48	490	Polys 11% Lymph 89%		22.0 mg.			
6-17-48	13			29.0 mg.	2000		
6-24-48	10,000 wbc 100,000 rbc	Polys 82% Lymph 18%	775 mg.	73.0 mg.	6500		Neg. smears for tbc.

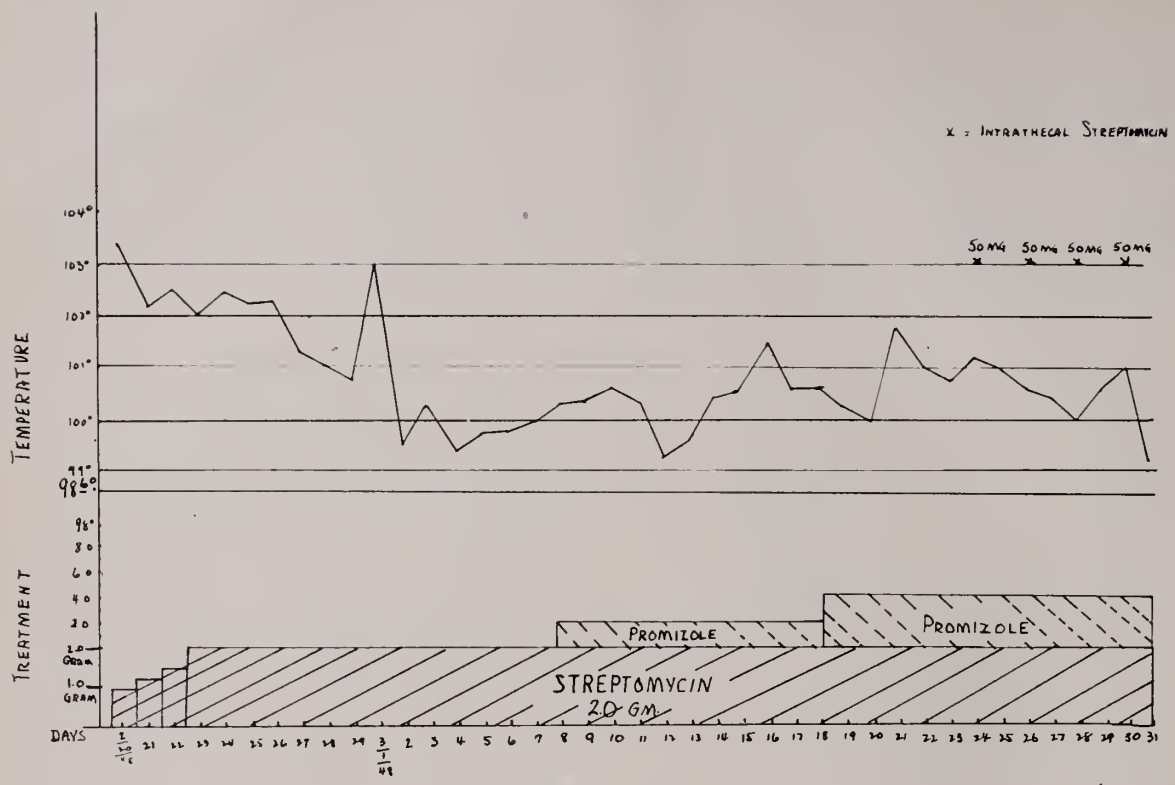

Fig. 2.

spinal arachnoiditis but in view of autopsy findings may have been renal in origin. Neurological examination revealed little but for hypoactive reflexes. Sensory examination was considered normal at all times. Streptomycin administration intrathecally (Fig. 2) was begun on March 24. 50 mg. of this was given in 10 cc. of normal saline. This was done every second day and because of the high protein and the possibility of a spinal arachnoid block cisternal punctures were done by Dr. George Craddock every other day from April 3 through April 11, 50 mg. of streptomycin being used each time. On April 14 the lumbar taps with intrathecal streptomycin 50 mg. were resumed. On April 16, 75 mg. of streptomycin was given. On April 18 and every second day 100 mg. of streptomycin was given intrathecally until April 24. By this time in spite of multiple transfusions, intravenous protein hydrolysates, glucose and vitamins she had become quite emaciated (weight went from 125 pounds to 75 pounds) because of nausea, vomiting, anorexia and severe headache. Streptomycin (Fig. 2) was given in the dose of 200 mg. every three hours from February 19 to March 18 at which time the dose was increased to 500 mg. every six hours from March 18 to April 24 when streptomycin was discontinued. On May 11, since she had shown definite improvement with the highest temperature reading in the past week being 99.4° F., she was dismissed on 8 gms. of promizole daily (Fig. 3). Complete examination revealed marked emaciation, moderate stiffness of the neck but no other pertinent physical findings. She did quite well at home, except for complaint of dizziness and nausea, and had little or no temperature elevation until June 7 when she began to have severe pains in her neck and arms and head with a temperature elevation to 101° and 102° F. daily. She again was nauseated and vomited and lost the five pounds in weight she had gained since being home. Physical examination revealed no findings other than those related to the meningeal irritation except that the patient was irrational and quite ill. She was readmitted to the hospital on June 17. Hemoglobin was 69%, red blood count 3,800,000 and white blood count 7,300. Polys were 83%, small lymphocytes 12% and large lymphocytes 5%. The urine showed a + 3 albumin with many pus cells. Temperature during the three days in the hospital ranged between 100° and 102.4° F. She was transferred to the University of Virginia Hospital on

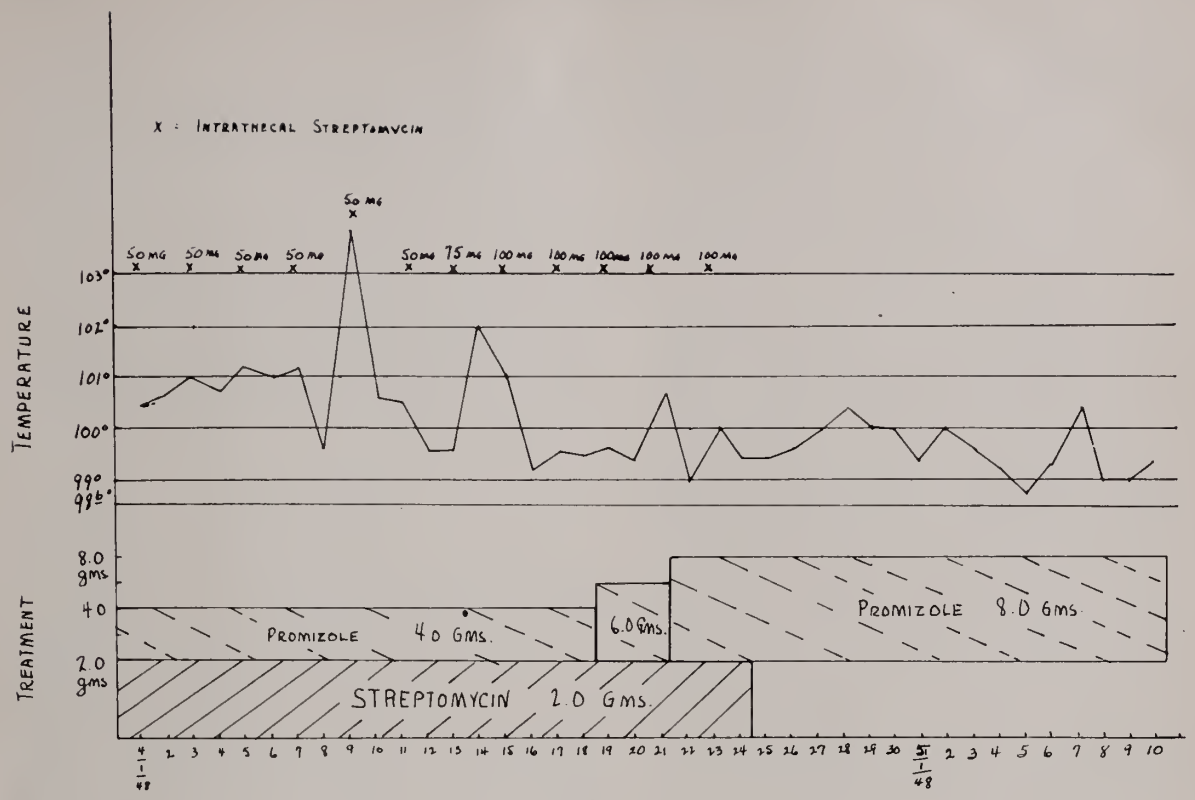

Fig. 3.

June 19, 1948.

Physical examination on admission at the University of Virginia Hospital showed a temperature of 101° F., a pulse of 100, respirations 16, blood pressure 120/80, and a fairly well developed but undernourished white female showing very evident weight loss. She was quite lethargic but complained bitterly if touched or moved. She apparently had a motor aphasia. No history could be obtained. The eyes were normal, the neck stiff. The chest was clear. The heart showed a normal rate and rhythm. There was a pericardial friction rub heard at the second interspace to the left of the sternum. There was marked wasting of the extremities. Reflexes were absent. On June 19 a lumbar puncture was done. Pressure was within the limits of normal. 8 cc. of bloody fluid were removed. On June 20 a lumbar puncture was done with the same findings and 100 mg. of streptomycin was given intrathecally. Likewise on June 24 a similar blood spinal fluid was found. She rapidly became more ill and died on June 27, 1948. X-ray films of the chest and skull showed no abnormalities of the skull and the lung fields were clear. Laboratory findings showed a cloudy white alkaline urine with specific gravity of 1.015 with + 1 albumin. The remainder of the findings were not remarkable except for the microscopic examination which revealed innumerable white blood cells. There were some small needle-like crystals resembling those of sulfanilamide seen in the urine. The blood showed 11 gms. of hemoglobin and a white blood count of 9,200 and a red blood count of 3,900,000. Tuberculin test was negative. Serology showed a negative Wassermann and 4 + Kahn, with a 4 units titer. Repeated examinations for tuberculosis in the spinal fluid were negative. Agglutination for Brucella and Widal was negative and the Weil Felix agglutinations were insignificant. The urine was cultured and showed the presence of B. Coli. Blood culture showed B. Coli and B. Aerogenes.

AUTOPSY REPORT

Autopsy was performed on June 28, 1948, at the University of Virginia and I am indebted to Dr. J. R. Cash for a very complete and careful study. For the sake of condensation negative findings have been omitted and it may be assumed that, unless otherwise stated, there was no abnormality.

The body showed extreme emaciation with almost

complete absence of subcutaneous fat and wasting of the musculature. Both lungs were bound down tightly to the parietal pleura by dense fibrous adhesions covering the entire surface. The pericardial cavity contained 75 cc. of clear yellow fluid. There was no fluid in the peritoneal cavity. There was a lymph node near the right auricle which measured 1 cm. in diameter and showed several caseous areas.

Lungs: There were small inconsequential scars in both lung apices in the centers of which there were hard caseous nodules from 1-2½ mm. in diameter. The tracheo-bronchial lymph nodes varied up to 1½ cm. in diameter. Several of them showed old, well encapsulated, caseous and fibrous changes. In the right lung there was a caseous yellow area measuring 2 cm. in diameter, and in the left lung there was a hyalinized area about ½ cm. in diameter.

Kidneys: The left kidney weighed 140 gms. and measured 11 x 7 x 3½ cm. The right kidney weighed 150 gms. and measured 12 x 7 x 4 cm. The right kidney showed many yellow mulberry-like areas on its cortex and in one portion this had eroded through the capsule and the process was present about the right adrenal. On section of the adrenal the process appeared to be superficial and did not affect the parenchyma. The left kidney to a lesser extent showed the same yellow masses spread over its cortex. The capsule stripped with moderate ease. On section the architecture of the kidneys appeared fairly normal, but there were many soft yellow areas scattered throughout the parenchyma. The ureters and the pelves of the kidneys showed no marked involvement except for the left kidney which showed some pyelitis. The ureters were patent and entered the bladder normally. The bladder showed a marked hemorrhagic cystitis.

G.I. Tract: There was an area in the first portion of the duodenum measuring ½ cm. in diameter that was black in color and appeared to be a defect in the mucosa. The wall, however, at this point was not indurated.

Adrenals: The left adrenal gland weighed 15 gms. and measured 6 x 5 x 1 cm. The right adrenal gland weighed 13 gms. and measured 7 x 3½ x 1½ cm. The right adrenal gland showed encroachment from the right kidney of yellow mulberry-like soft areas of infection; however, on section the cortex appeared normal. The left adrenal gland showed medullary autolysis but otherwise appeared normal.

Brain: The meninges covering the brain were cloudy with diffuse thickening, particularly along the base. There were innumerable pin head to pin point sized nodules along the superficial blood vessels of the brain. The lateral ventricles were more distended than usual and the vessels of the choroid plexus showed the same white dots along their course as did the vessels of the brain. The cerebral cortex showed no abnormality. The cerebellar cortex showed a small superficial caseous tubercle which had apparently ruptured into the meninges. This tubercle measured 3 mm. in diameter and had a dense well formed fibrous wall and caseous center. The spinal fluid was quite abundant and was a cloudy white in color.

MICROSCOPIC

Microscopic examination was carried out completely but only that portion which is pertinent to the case presented is given.

Lungs: The pleural surface showed well organized dense fibrous adhesions. There was minimal anthracosis and emphysema. Sections from the right apex showed a caseous area surrounded by a well-defined fibrous capsule. The immediate adjacent pulmonary tissue appeared normal. Special stain did not reveal acid fast bacilli. Other sections of the lungs showed moderate emphysema and an occasional small microscopic healing tubercle in the pulmonary tissue. One such area showed several Langhans giant cells, epitheloid cells and surrounding tufts of lymphocytes. The hilar lymph nodes contained much black pigment and scattered areas of healing tuberculosis. These areas had giant cells with central caseous portions and were surrounded by pink hyalin connective tissue.

Liver: The liver showed pericentral congestion and about some of the portal areas small pink staining masses of monocytes, lymphocytes and tissue debris. They also appeared to contain a hyalin type connective tissue. They were typical of healed and healing tubercles. They were microscopic in size.

Kidneys: The lesions described grossly in the kidneys proved to be pyogenic abscesses consisting of many polymorphonuclears surrounding much necrotic tissue. In several areas Gram positive cocci in large clumps could be identified. Purulent material was seen extending from the cortex to the pelvis along the course of the collecting tubules. The renal pelvis showed marked congestion and hemorrhage as well as lymphocytic and polymorphonuclear

infiltration. The process was apparent in both kidneys.

Adrenals: The cortex of both glands showed marked vacuolization of the cells. The medullary portion showed no remarkable changes other than congestion.

Spleen: The spleen was congested. There were numerous microscopic well circumscribed areas composed of hyalin connective tissue, lymphocytes, monocytes and an occasional polymorphonuclear. Although these areas were frequent, none of them contained any giant cells. They had the appearance of healing tubercles.

Lymph Nodes: The axillary lymph nodes showed small hyalin masses of connective tissue, an occasional one containing a Langhans type of giant cell. The tubercles were distinctly healing.

Pituitary: In the fibrous capsule surrounding the pituitary gland there were several accumulations of lymphocytes. The gland itself showed no striking pathological changes.

Brain: Sections from the frontal cortex showed edema, scattered lymphocytes, macrophages and congestion in the meninges. The parietal and occipital meninges showed similar changes. The process was most marked in the occipital area with macrophages containing hemosiderin being present. No remarkable changes were seen in the tissue of the cortex. Small subependymal groups of epithelioid cells surrounded by lymphocytes were present in the wall of the lateral ventricles. The cerebellum showed a caseous area extending from the brain tissue to involve the meninges. The area was surrounded by epithelioid cells, lymphocytes, plasma cells and scattered Langhans giant cells. The meninges of the pons, the spinal cord and their nerves were heavily infiltrated by lymphocytes and plasma cells.

Two sections from the caseous area in the lung, sections of the cerebral cortex, the basal ganglia, the caseous area in the cerebellum, and the hippocampus and spinal cord were made and stained for acid fast bacilli. Careful search showed only four typical acid fast bacilli in the meninges of the inferior lateral portion of the section of the basal ganglia. The caseous areas in the cerebellum and lung as well as other sections stained were negative for acid fast bacilli.

ANATOMICAL DIAGNOSIS

(1) Bilaterial apical healing pulmonary tuberculosis. (2) Healing disseminated tuberculosis of lungs, liver, spleen, tracheobronchial and axillary lymph nodes. (3) Caseous cerebellar tubercle with extension to meninges. (4) Tuberculous meningitis with marked attempts at healing. (5) Early internal hydrocephalus. (6) Bilateral pyelonephritis (Gram positive cocci) with multiple abscesses. (7) Acute hemorrhagic cystitis.

COMMENT

The time relation of dissemination to the development of meningeal signs can be estimated fairly accurately in the case reported. Onset of pleural effusion was January 9 and she again became febrile on about February 13 with early symptoms of meningitis on about February 20 and definite signs of meningitis on February 23. At the time streptomycin therapy was instituted on February 19 there was only a febrile state without meningeal signs. In retrospect, it would seem that the pleural effusion was a manifestation of disseminated tuberculosis, a latent period of several weeks, and then a manifest meningeal involvement.

In retrospect, the therapy may be criticized for failure to use intrathecal streptomycin early in the course of the illness. A lack of early adjuvant therapy with promine or promizole in adequate dosage also failed to allow maximal advantage in therapy, but the actual importance would not seem to be great. Our primary hope was that promizole would be a sheet anchor in preventing relapse after discontinuation of streptomycin. This it did not do entirely.

In view of the renal lesions present at autopsy, the importance of the bladder and renal infection by coliform organisms in the patient's illness may have been underestimated. Urinary retention in the earlier course of her illness was so complete that continuous drainage by an indwelling catheter became necessary over a prolonged period. This was the apparent source of the pyelonephritis and chemotherapy was ineffective. Penicillin, sulfadiazine, mandelamine, and tablets of combined sulfadiazine, sulfamerazine and sulfathiazole were used as adjuncts to streptomycin with beneficial effect apparent in the control of the urinary infection but with a final recurrence which was important as a cause of death.

It is of interest to note that streptomycin therapy was begun before manifestations of meningeal involvement were noted. Hence, early therapy in this case made no apparent difference. If the meningitis

was related to the caseous area in the cerebellum, as seemed likely, and the brain tissue contained no streptomycin, as noted in studies mentioned before, the reason for this is apparent.

SUMMARY

A 34 year old white female with a generalized miliary tuberculosis and tuberculous meningitis was treated with streptomycin administered intramuscularly and intrathecally and with promizole. She survived from January, 1948, to June, 1948, on this therapy. Autopsy revealed microscopic evidence of partial healing of the tuberculous lesions but acid fast bacilli could still be found in the brain. A pyelonephritis complicated her illness. This was due to urinary retention, catheterization, etc. This added to the gravity of her condition and made therapy a combined problem.

Miliary tuberculosis and tuberculous meningitis still has a poor outlook in spite of newer methods of therapy. The use of promizole and streptomycin in combination caused marked healing of the tuberculous lesions but did not prevent a lethal exodus.

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1378 Rivermont Avenue.

New Directory Shows One Doctor for Every 750 Persons in U. S.

The United States at the beginning of 1950 had one doctor for every 750 persons. This is the best showing for any nation in the world, with the exception of Palestine where a temporarily high ratio exists because of an influx of refugee doctors.

Next to the United States, the largest supply of doctors in relation to population exists in Great Britain where, based on latest available official figures, there was one doctor for 870 persons. Other countries in order are: Iceland, 890; Denmark, 950; Canada and New Zealand, 970. Other nations range from 1,100 persons per doctor to 25,000 persons per doctor, a situation which exists in China.

The ratio for this country was revealed by Dr. George F. Lull, Chicago, secretary and general manager of the American Medical Association. It was based on an estimated national population of 151,000,000 and 201,278 doctors whose names will be contained in the eighteenth edition of the American Medical Directory, to be issued about June 1.

The new directory will contain 2,913 pages, or 112 more than the previous record volume issued in 1942. It will list the names, year of birth, medical school and year of graduation, specialty, if any, and addresses of physicians in Canada and the United States dependencies, as well as of those in the United States.

THE TUBERCULIN TEST IN YOUNG CHILDREN AS AN AID IN ADULT TUBERCULOSIS CASE FINDING*

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In spite of evidence that those children infected with tuberculosis before the age of three years bear a serious prognosis,[1] there is a tendency among the majority of practitioners, including many pediatricians, to eschew the use of routine tuberculin tests in the young child. Such a practice is to be decried.

As Park[2] has said, "There is more than one way of telling whether or not an adult has an open tuberculous lesion; one can find the bacilli in his sputum or one can find the infection in his baby." Or, stated another way, the diagnosis of tuberculous young children and the subsequent follow-up of possible adult contacts by x-ray is a most effective means of finding adults who have tuberculosis in a communicable stage. The majority of these young children have relatively few close contacts, and it is usually easy to find the tuberculous adult. In the Children's Chest Clinic of the Medical College of Virginia forty-one tuberculin positive children three years of age and under are now being followed. Without appreciable social service assistance the tuberculous contact has been demonstrated in thirty-six instances.

As far as case finding is concerned, the child under three years of age, who is tuberculin positive and has no other demonstrable pathology, is just as important as the one with a more serious manifestation of the disease. All tuberculin positive children in this age group are presumed to have active tuberculous infection,[3] because there has hardly been time for the infection to become inactive. If they are infected at all, it behooves the practitioner to advise follow-up of all possible adult contacts. If the physician waits for the appearance of symptoms in the small child, he is not only very late as far as this particular child is concerned, but he completely misses all the symptom-free, tuberculin positive children, a much larger and, therefore, as far as case finding is concerned, more important group.

Nor is the approach to tuberculous infection in young children by means of chest x-ray alone satisfactory. This method fails to locate the symptom-free, x-ray negative, though tuberculin positive, children.

Following are examples of routine case finding from tuberculin positive children:

Case 1. P. S., age 2 years, was brought to our office for routine examination. He had no symptoms, and physical examination and laboratory studies were essentially normal. Tuberculin patch test was strongly positive. His father had been discharged from the Navy only a few weeks before and was x-ray negative at that time. His only other close contacts were his mother, who was seven months pregnant, and his negro nurse. The latter was also scheduled to take charge of the expected baby. A chest x-ray was advised for both nurse and mother. The mother was shown to have no tuberculosis, but the nurse was found to have tuberculous pneumonia.

Case 2. G. E. B., a thirteen months old colored female, was admitted to Dooley Hospital on December 29, 1947, with diagnosis of pertussis complicated by pneumonia. Treatment with pertussis hyperimmune serum and chemotherapeutic agents improved the cough, but the lung pathology, demonstrable by x-ray, persisted. Tuberculin test was positive, and gastric washings revealed tubercle bacilli.

On follow-up, two siblings were found to be tuberculin positive. Adult contacts were x-rayed, and the father was found to have far advanced pulmonary tuberculosis.

Case 3. S. A., an eight months old colored male, was seen in a city child welfare clinic with a respiratory infection and temperature of 102 degrees. History at that time revealed no tuberculosis contact, but the maternal grandfather had died with pulmonary tuberculosis. The infant was admitted to Dooley Hospital with tentative diagnosis of tuberculous pneumonia, confirmed later by a positive tu-

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berculin test, area of increased density in lung parenchyma on chest x-ray, and the demonstration of tubercle bacilli from gastric washings.

The patient's mother refused to submit to either a tuberculin test or chest x-ray. Six weeks later, she died suddenly in the St. Philip's Hospital emergency room with far advanced pulmonary tuberculosis, proved at autopsy.

Two siblings and one cousin have positive tuberculin tests and are being followed in the Children's Chest Clinic of the Medical College of Virginia. All the other adult members of the household (two uncles, four aunts, and grandmother) have negative chest x-rays.

DISCUSSION

Routine tuberculin tests are of greater significance in the young age group, because of the relatively small number of possible contacts. A positive tuberculin test in a child under three years of age usually means that there is a tuberculous adult near at hand. The likelihood of a chance contact is not great. It should be added here that one should not forget the grandparents, other relatives, nurse, or other household servants when searching for contacts. Recently, we had a one year old child who was found to be tuberculin positive. The maternal grandmother was known to have healed minimal pulmonary tuberculosis, and all other members of the household were shown to be free of the disease. Accordingly, the grandmother was assumed to be the contact, although tubercle bacilli could not be demonstrated from her sputum. Some months later, the gardener, who often played with the child and who had not been previously examined, came to his employers and told them that he had been to the clinic and had active "lung trouble and must go away to the sanatorium."

In our private practice all new patients more than a few months of age receive a tuberculin test. In our hands, the so-called Vollmer patch test[4] has been satisfactory. The test is reasonably sensitive and eliminates the "needle bugaboo." Before applying the patch between the scapulae, the skin is thoroughly cleansed with acetone. Written instructions are given the parent that water must be kept away from the patch and the patch must be removed after forty-eight hours. Reading is done forty-eight hours after removal of the patch.

The patients seen in the Children's Chest Clinic at the Medical College of Virginia have usually been tuberculin tested before admission to the clinic. But here, too, as shown in the examples cited above, the demonstration of tuberculin positive children often leads to the diagnosis of communicable adult tuberculosis.

SUMMARY

Routine tuberculin tests are especially valuable in children under the age of three years. The likelihood of chance infection is not so great in this age group, and follow-up of possible contacts is relatively easy. Since the majority of tuberculous children show no physical or roentgenological evidence of the disease, failure of the physician to employ the tuberculin test often means failure in diagnosis.

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414 West Franklin Street.

DISSECTING ANEURYSM OF THE AORTA WITH COMPLETE OCCLUSION AT THE BIFURCATION SIMULATING SADDLE EMBOLISM*

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Obstruction of main arterial branches of the aorta by dissecting aneurysm may produce symptoms and findings suggesting embolic occlusion which in turn may lead to fruitless surgical intervention. This is especially true when the dissecting aneurysm suddenly obstructs the subclavian or iliac arteries, producing sudden pain, cyanosis, coldness, flaccid paralysis and absent arterial pulsation in the affected limb. The importance of differentiation between embolic obstruction, which is often amenable to prompt surgical intervention, and obstruction due to a dissecting aneurysm, which is not amenable to surgery, is obvious.

The case to be presented well demonstrates the clinical similarities in the two conditions, the difficulty in differentiating between them and the features which conclusively indicated the presence of a dissecting aneurysm rather than a saddle embolism.

CASE REPORT

W. B., hospital number 4060, a 52 year old white male, was admitted to the Baker Veterans Administration Hospital at 11:30 A.M., June 27, 1948, complaining of excruciating pain in the sacral area and paralysis of his lower extremities of 3½ hours duration.

The patient, who had retired early on the previous evening feeling quite well, had awakened at 8:00 A.M. after a good night of sleep and had gone to an outdoor toilet where he had urinated and had a normal bowel movement. Just as he returned to the house he was seized by acute agonizing substernal pain. Within 15 minutes he began having severe pain in his lower back and lower extremities and within a half-hour he was unable to move either leg. His local physician gave his two hypodermic injections of morphine which completely relieved his chest pain, but did not relieve his low back pain. He was then brought to this hospital by ambulance.

Inquiry regarding the patient's past medical history revealed that he had a sudden attack of low back pain with paralysis of both lower extremities fifteen years before which had cleared up entirely after a few days of bed rest. That episode was attributed at subsequent hospitalization to a ruptured intervertebral disc. No surgery was advised or performed despite continued back pain over the succeeding years. He also stated that he had arthritis of his spine. The patient had been told that he had high blood pressure for the past six years, the systolic values alledgedly ranging between 180-200 mm. Hg., the diastolic readings not having been mentioned. One month prior to the present episode he had a sudden attack of severe substernal pain for which he was hospitalized for two weeks with apparent complete recovery.

Except for his chronic back pain and for moderate nocturia the patient had no recent complaints. He was never dyspneic, edematous nor did he have exertional angina.

Physical examination on admission revealed an obese white male complaining bitterly of pain in his lower back. His pulse was 152 per minute, respirations 20 per minute, and temperature 99.2 F. rectally. The pulse was of paradoxical type and much weaker on the left than on the right. The blood pressure in the right arm was 165/100 mm. Hg., and in the left was 110/80 mm. Hg.

The pupils were constricted, probably due to morphine. The neck veins were not abnormally distended. Expansion of the thorax was equal bilaterally. Percussion of the chest revealed normal resonance over both lung fields. The left border of cardiac dullness extended to 2 cm. to the left of the midclavicular line. Auscultation revealed no pulmonary rales. The heart sounds were somewhat distant, but no friction rub or murmurs were heard.

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From the Newton D. Baker Veterans Administration Hospital.

Palpation of the abdomen disclosed no masses or tenderness. The lower abdominal wall was flaccid. Pulsation of the abdominal aorta could not be felt. There was a mottled gray cyanosis of the skin of the trunk below the level of the umbilicus, which also involved both lower extremities. The abdominal reflexes were absent. There was diminished sensation over the lower abdomen which merged with anesthesia of the extremities. There was complete flaccid paralysis, anesthesia and areflexia of both lower extremities. There was complete absence of pulsation of femoral, popliteal, posterior tibial and dorsalis pedis arteries bilaterally. There was cadaveric coldness of both lower extremities. Rectal examination was negative; there was normal colored stool on the examining finger.

Laboratory studies showed an erythrocyte count of 3.2 million with a hemoglobin level of 9.5 gm. per 100 cc. of blood. The leukocytes numbered 10,500 per cu. mm. Urinalysis revealed a faint trace of albumen, sp. gr. of 1.005 and only an occasional granular cast and leukocyte in the sediment.

The immediate impression based on the dramatic manifestations of pain, cyanosis, bilaterally absent femoral pulsation, paralysis and coldness of the lower extremities, was that we were dealing with a massive saddle embolus lodged at the bifurcation of the aorta. The relatively over-shadowed physical findings of unequally forceful radial pulsations quantitatively demonstrated by the markedly lower blood pressure reading in the left than in the right arm; forced consideration of an aortic lesion at the level of the left subclavian artery; and the paradoxical pulse suggested cardiac tamponade.

The patient's chest was therefore examined under the fluoroscope and no pulsation of the cardiac silhouette was seen. A needle was then passed into the pericardial sac. Blood was obtained, demonstrating tamponade due to hemopericardium.

On the basis of these findings the diagnosis of dissecting aneurysm of the aorta was made. It was postulated that the dissection involved the entire length of the aorta with partial rupture of the intrapericardial portion resulting in hemopericardium; partial occlusion of the left subclavian artery resulting in the lower blood pressure in the left arm; occlusion of the vertebral arteries, resulting in paraplegia; and complete occlusion of the aorta at the bifurcation resulting in the signs of ischemia of the lower extremities previously described. It was felt that the mesenteric and renal arteries were spared since there were no abdominal symptoms or signs, nor was blood found in the urine or feces.

The patient's condition rapidly deteriorated, his blood pressure slowly fell (always remaining considerably lower in his left than in his right arm) and he died at 3:40 A.M. on the morning following admission, 18 hours after the onset of his symptoms.

At autopsy there was marked cyanosis below the level of the umbilicus. There was 250 cc. of partially clotted blood in the pericardial cavity. The heart was enlarged (675 grams). There was separation of the commissures of the aortic valve with hyalinization and calcific plaques in the sinuses of Valsalva. The ostia of both coronary arteries were narrowed. There was a transverse tear in the aortic wall 3½ cm. above the aortic valve. This tear extended through the thickness of the aorta and into the aortic reflection of the pericardium. The entire aortic intima showed advanced arteriosclerotic changes with atheromatous plaques and ulcers. From the point of the tear in the aortic wall the dissecting aneurysm extended through its entire length separating the outer one-third of the media from the remainder of the vessel. The false channel was of about the same caliber as the aorta and lay posteriorly and to the left. It involved all of the small arteries including the intercostals and lumbars. The renal and mesenteric vessels were spared. At the bifurcation of the iliacs there was an extensive clot in the aneurysm completely occluding the lumen. There was seepage of blood into the retroperitoneal tissues and into the psoas muscles. The left pleural cavity contained 500 cc. of clotted blood. The peritoneum was smooth and glistening. The abdominal viscera showed no changes. The kidneys were grossly normal except for moderate arteriosclerotic scarring.

DISCUSSION

In Shennan's[1] exhaustive review of the literature up to 1934 he notes that only six of the 302 cases of dissecting aortic aneurysms reported up to that time were diagnosed prior to death. Although the number of correct ante-mortem diagnoses of the condition is increasing, it still does not exceed 25% of the cases reported in recent series.[2,3] The chief difficulty in making a correct clinical diagnosis is the bizarre, wide-spread and apparently unrelated symptoma-

tology and physical findings. Since the aorta supplies blood to the entire body it becomes apparent that diversity of symptoms and findings is to be expected when this structure becomes involved by disease. The clinical picture is attributable to three factors.

1. The dissecting process: As the split in the media progresses, severe pain is experienced localized roughly to the area involved and extending downward and upward as the dissection progresses.

2. Vascular occlusion: The dissecting column of blood may obstruct the aortic branches at their orifices or by extension of the dissection along the branches. Not all branches are involved, some being by-passed and spared, thus contributing to the spotty clinical picture. This phase gives rise to the signs of ischemia. Thus obstruction of the coronary ostia gives rise to symptoms of myocardial infarction; of the carotid, to neurologic findings such as hemiplegia and aphasia; of the subclavian, to arterial ischemia of the upper extremity; of the visceral arteries, to visceral infarction; of the intercostal, lumbar and sacral arteries, to paraplegia; of the renal arteries to renal infarction; and of the iliacs to arterial ischemia of the lower extremities.

3. Rupture: Sudden massive exsanguinating rupture quickly results in death. Such a catastrophe robs differential diagnosis of much point. Small tears are common, however, and may result in hemopericardium, hemothorax (almost invariably on the left side), or bloody extravasation whenever the rupture occurs.

It is the very diversity of findings, the discontinuity of the clinical picture, that suggests the presence of a dissecting aneurysm, for in almost every instance of the disease more than one vascular system is involved, giving rise to changes which, if sought for and properly interpreted, will elicit the correct diagnosis.

The point we wish to emphasize is that dissecting aneurysm should be considered in the differential diagnosis of all sudden arterial occlusions. With this possibility in mind one should seek for involvement of other vascular systems. Evidence of such involvement may be minimal, as is well brought out in the case reported by Greene and Saphir.[4] Their patient presented the typical findings of embolism of the left iliac artery. Surgical intervention was considered until ecchymosis of the left abdominal wall suggested that the iliac obstruction was only part of a more extensive process which they deduced was a dissecting aneurysm of the aorta extending along the iliac and deep inferior epigastric artery. At autopsy their reasoning was verified.

In our case the sudden bilateral iliac occlusion pointed so strongly toward a saddle embolus that surgery was also contemplated. However, the relatively obscure findings of unequal radial pulsation suggested partial subclavian occlusion; and paradoxical radial pulsation suggested hemopericardium, as was subsequently verified by pericardial aspiration. The composite picture convinced us that the underlying process was a dissecting aneurysm and plans for surgical intervention were abandoned.

The fact that a number of reports of surgical intervention for supposed embolus proved to be cases of dissecting aneurysm makes us feel that this report may be of value.[5,6]

SUMMARY AND CONCLUSIONS

A case is presented in which a dissecting aneurysm of the aorta produced complete occlusion at the bifurcation simulating a saddle embolus. Surgical intervention for the purpose of removing the supposed embolus was entertained until the relatively obscure findings of unequal and paradoxical radial pulsations led to the discovery of partial subclavian occlusion and hemopericardium. The diversity of the vascular findings, in turn, led to the diagnosis of dissecting aneurysm and to the abandonment of contemplated surgery. It is suggested that dissecting aneurysm should be considered in all cases of acute major vascular occlusion and that signs of involvement of other vascular systems may establish the diagnosis.

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PRIMARY CANCER OF THE LUNG*

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Carcinoma of the lung is now recognized as one of the common tumors in man. In necropsy statistics from general hospitals on the frequency of occurrence of carcinoma, it usually ranks third, being exceeded by carcinoma of the stomach and carcinoma of the large bowel. In a review of 93,560 collected necropsies reported by Steiner[1] in 1944, 925, or 0.99 per cent, were carcinoma of the lung. This group represented 9.4 per cent of all those diagnosed as carcinoma. It seems to be universally agreed that carcinoma of the lung is seen more frequently now than in former years. However, there have been considerable differences of opinion as to whether or not the increase is relative or real. It was Simons's[2] opinion, from extensive review of the literature, that the increase in incidence is absolute and not only apparent. Steiner,[1] in an attempt to answer this problem, reviewed 5,515 consecutive necropsies performed at the University of Chicago between the years 1902 and 1941, inclusive. Of this group, 126 were diagnosed as lung carcinoma, an incidence of 2.3 per cent. There were 1224 carcinoma cases of all types found, which gave an incidence of lung carcinoma in this latter group of 10.3 per cent. From a comparative study of the incidence of other tumors, it was his conclusion that the increase was more apparent than real. Macklin,[3] after surveying the data and the methods used, concluded that although the increase in lung cancer is definite, the absolute increase was not as marked as most of the authors have stated.

The increase in incidence has been ascribed to several factors: (1) increase in longevity, and since this disease occurs almost exclusively in older age groups, an increasing incidence of lung cancer is to be expected; (2) improved methods of diagnoses. The widespread utilization of roentgen, bronchoscopic and other methods of diagnosis has served to more accurately diagnose pulmonary cancer which in former years had masqueraded as pulmonary tuberculosis, unresolved pneumonia, chronic lung abscess and chronic pneumonitis. It must be remembered that the first successful pneumonectomy for bronchogenic carcinoma was performed by Graham[4] only sixteen years ago. The knowledge that pulmonary resection can now offer hope to these individuals who formerly were doomed to an early death in every case so diagnosed, has served to stimulate physicians to become cancer-conscious. As a natural consequence, interest in chest diseases and particularly in thoracic surgery has received an impetus which promises, from all the available evidence to date, to offer a greater degree of optimism for the future handling of these patients than has ever existed before. At the present time, mass chest x-ray surveys are being conducted throughout the country in an attempt to find pulmonary lesions in their pre-symptomatic stage, when treatment, properly and promptly instituted, offers the best chance for cure. The proper identification of these early forms of intrathoracic disease demands serious attention. The tendency on the part of physicians to minimize the significance of these lesions can only lead to disaster. The all too common tendency on the part of physicians to reassure the patient and ask him to return in several months for a check-up, only to find that a small density has extended into a stage of inoperability, is much too common a history. In no other disease process is time so dangerous an enemy. Without exception, a policy of watchful waiting leads to ultimate death. In a series of cases recently reported by Ochsner,[5] in those cases in which resection was not done, no patient survived for as long as three years.

ETIOLOGY

Up to the present state of knowledge, there is no one known cause of pulmonary cancer. Chronic inflammatory diseases of the lungs, influenza, roentgen ray, constant exposure to gases, fumes and dusts, tobacco smoking, have all been mentioned as possible causes. The chemical action of inhaled radioactive dusts has been used to explain the frequency of tumors among the Schneeberg miners.[6]

Sex Incidence. Lung cancer has its greatest incidence in the male sex. The percentage among men has varied in the different reports from 75 to 91 per cent.[2,7,8,9,10,11]

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Age Incidence. Almost 90 per cent of the cases reported by Ochsner, *et al.*,[12] were in the fifth, sixth and seventh decades Ninety-six per cent of 157 cases reported by Adams[13] were over 40 years of age. Simons,[2] in a careful perusal of the literature prior to 1937, found only 14 cases in persons under 20 years of age. Since then, several additional cases have been reported in this age-group.[8,12,14]

Color Incidence. Lung carcinoma is found to be twice as frequent among the white race as compared to the colored race.[12,15]

PATHOLOGY

Bronchogenic carcinoma arises, with few exceptions, from an undifferentiated stem cell in the basal membrane of the bronchus. Microscopically, they are usually classified into three types: Squamous cell carcinoma is the most frequent. It offers the best prognosis, as it grows slowly and metastasizes late. Undifferentiated cell type (small cell) is slightly less frequent and the third type, adenocarcinoma, occurs in approximately 20 per cent of all the cases. Both the undifferentiated and adenocarcinoma are more rapid in their progress, metastasizing early with a correspondingly poor prognosis.

Gebauer,[15] in a scholarly presentation of the subject, believed that in the majority of cases, each type of pulmonary cancer has its own peculiarities at the onset and that these differences become more pronounced as the disease advances. In a series of 158 proven cases, he subdivided them as follows: small cell carcinoma—53 cases; adenocarcinoma—32 cases; squamous cell carcinoma—61 cases, and the remaining 12 cases as carcinoma simplex—5, and type unknown—7. In the group of small cell carcinoma, 66 per cent arose in the main stem bronchi and the remainder frequently began near the orifice of a secondary branch. The formation of an irregular mediastinal mass is characteristic of this centrally located and rapidly growing tumor. It is highly invasive and extends along the bronchus, and surrounds it and the neighboring structures with firm tumor. In the group of adenocarcinoma, 70 per cent arose in the secondary branches, such as the lobar stems. Peripheral growth was more marked than its central extension. It thus may form a well circumscribed mass which appears as a nodule in the lung. Commonly found at autopsy was widespread, blood-borne metastases as well as lymphatic metastases, with diffuse involvement of the mediastinal lymph nodes. In the group of squamous cell carcinoma, 70 per cent arose in the first branches of the main stem bronchi. The tumor extends centrally along the bronchus causing a fixation and constriction of this structure. It seems to avoid the lymph nodes. Local growth results in the formation of a nodular mass about the bronchus of origin. In general, these metastasize late and, even then, not nearly as extensively as the other two types. These tumors exhibit cavity formation in over 50 per cent of autopsy cases.

The right lung is more frequently involved than the left lung. Ochsner[16] found that 59 per cent of his cases were in the right lung and 41 per cent in the left. In review of the 2177 cases from the available literature by Simons[2], it was similarly found that 1145 involved the right lung, and in 992 the left lung was involved. The upper lobes are more frequently the sites of predilection than the lower.[2] In Ochsner's[16] series, 50.9 per cent were in the upper lobes, 28 per cent in the right upper lobe and in 22.9 per cent, the tumor was in the left upper lobe.

The widespread distribution of metastases in primary carcinoma of the lung is a characteristic feature and constitues the most important single prognostic factor. The modes of metastatic extension are as follows: (1) direct extension, (2) bronchial intraluminal extension, (3) hematogenous and (4) lymphatic. In a series of 3047 collected cases by Ochsner[17] the regional lymph nodes were involved in 72 per cent. The next most frequent site of involvement was the liver (33 per cent). The pleura was next in frequency with 29.8 per cent, and in diminishing order came the lungs, bone, adrenals, kidneys, brain, heart, pericardium, pancreas, peritoneum, gastro-intestinal tract, skin, spleen, thyroid, tonsil and tongue. Subcutaneous metastatic nodules have been noted on the chest wall, scapular region, abdominal wall, the course of the spine and upper extremities. Although infrequent,[18] (2.8 per cent of 1063 cases), they should always be searched for in every suspected case. They are usually small and shotty, less than 2 cm. diameter, but occasionally are much larger. Ochsner[17] also showed that lymphatic metastases may occur in other groups of nodes in addition to the tracheo-bronchial group. The most frequent sites were as follows: abdominal (20.7 per cent), cervical (17.4 per cent), retroperitoneal

(8.1 per cent), iliac (6.8 per cent), axillary (6.6 per cent), and in diminishing frequency in the peripancreatic, supraclavicular, peribiliary, submaxillary and femero-inguinal nodes.

SYMPTOMS

There are no characteristic symptoms and signs of bronchogenic carcinoma. The onset of the condition is usually insidious and the symptoms are likely to be attributed to some other cause. Rarely, these lesions may be found on routine roentgenographic studies without any symptoms.

The frequency and type of symptoms presented at the onset will depend a great deal on the location of the lesion. Those that originate in the major bronchi will usually complain of cough early, which, while of a non-productive character at the onset, will usually become productive later of a mucoid type of expectoration. These patients will also occasionally complain of a faint audible wheeze which they had never experienced before. Slight asthmatic wheezing is a very important early symptom. This, when associated with audible wheezes over a localized area of the chest, can only mean one thing, partial bronchial obstruction. Hemoptysis, the result of endobronchial ulceration, likewise is a relatively frequent symptom in the hilar type of lesion. Abbott,[19] in a study of 187 cases with bronchogenic neoplasms, found that 53.6 per cent described this symptom. In his experience. after the age of 40, carcinoma was the leading cause of hemoptysis. As the tumor grows and causes obstruction, secondary symptoms as a result of the sequelae from the obstruction (atelectasis, bronchiectasis, lung abscess) will predominate. These produce such symptoms as increase in cough with purulent expectoration, chest pain, fever and dyspnea. Generally, the larger the bronchus involved, the more extensive will be the results of the obstruction and the more pronounced the symptomatology. In the more peripheral type of tumor, pain may be the only early symptom. and the cough, when it does develop later, will be unproductive for a long time. Frequently, these tumors give rise to no pulmonary symptoms until long after distant metastases have occurred. In Ochsner's experience, many of the patients dated the onset of their illness with an acute respiratory infection which failed to clear in the usual length of time. The other symptoms, hoarseness, dysphagia, weakness, anorexia, weight loss, clubbing of the fingers, usually occur late and are of no diagnostic benefit in an attempt at an early diagnosis.

Superior sulcus tumors, because of their location in the apical bronchi, frequently give rise to additional symptoms which may be of diagnostic significance. These usually consist of pain near the tip of the shoulder and about the shoulder girdle and occasionally extend down the arm on the involved side. Horner's syndrome on the homolateral side may be produced by impingement of the tumor on the sympathetic nerves.

The duration of symptoms in the reported series varies considerably, but generally the interval from the onset of symptoms and death is relatively short. In Feld and O'Malley's[20] series, the total duration of life from the onset of symptoms to death averaged only 14.5 months.

PHYSICAL FINDINGS

One of the great difficulties in the diagnosis of pulmonary carcinoma lies in the fact that the physical findings are variable and not peculiar to this disease. In fact, the signs commonly attributed to this disease are due to bronchial obstruction. Significant manifestations are more likely to be encountered if the tumor encroaches on the lumen of larger bronchi or on the pleura. A relatively small tumor completely occluding a main stem bronchus will produce classical signs of atelectasis. On the other hand, a peripherally located tumor, even one of considerable size which does not cause obstruction to a major bronchus or encroach on the pleura, may produce relatively few physical signs.[21]

DIAGNOSIS

Roentgenologic Studies. The roentgen film comprises our first line of defense in the diagnosis of pulmonary neoplasm. A diagnosis of primary lung cancer was made by roentgenography or stated as a positive suspicion in 96.7 per cent of the cases reported by Adams.[13] Westermark[22] and Rigler[23] have emphasized the importance of inspiratory and expiratory films for the early diagnosis of bronchial tumors. Partially obstructing bronchial lesions may cause a valve-like action so that inspired air reaches the lung during inspiration, but with the normal narrowing of the bronchus on expiration, the air cannot escape and so is retained in that part of the lung peripheral to the stenosis. When the stenosis becomes complete, obstructive atelectasis

results. Gebauer,[15] as a result of his investigations of the behavior of the different types of carcinoma, believes that each type produces a rather characteristic x-ray, which, of course, is varied by the age and location of the tumor:

a. Small cell carcinoma.—Early, it is usual to see an irregular mass which blends with the mediastinum and does not have a sharp outline. The primary mass enlarges rapidly and extends principally into the mediastinum.

b. Adenocarcinoma.—Early, one frequently sees a sharply circumscribed dense mass which, for the most part, is separate from the mediastinum. Late, there is little to distinguish it from the other types.

c. Squamous cell carcinoma.—Early, one sees a nodule in the lung which is not entirely peripheral and is less sharply circumscribed than the primary adenocarcinoma. Growth of the tumor tends to produce occlusion of a secondary bronchus (where it originates in 70 per cent of cases) and to cause lobar atelectasis. Necrosis and cavitation of the primary tumor may occur early and make the radiograph indistinguishable from that of lung abscess.

Fluoroscopy. This should be a definite part of the routine in any thorough chest study. Here, one gains specific information concerning diaphragmatic excursions, the position of the mediastinum, the presence or absence of localized expiratory emphysema, and, if the mass is in the mediastinum, whether or not it pulsates. By rotation of the patient, one can determine whether the mass is separate from the mediastinum and, also, the retrocardiac space can be visualized. Finally, from one's fluoroscopic observations, it may be possible to aid in the selection of what radiographic positions will best demonstrate the pathology present.

Bronchoscopy. Next to roentgenoscopic and roentgenographic study, bronchoscopy is the most important procedure in evaluation of the patient under observation for lung cancer. The bronchoscopist must be utilized, not as a mere technician with no knowledge of the case, but his position should be that of a consultant, one with whom the clinician has discussed the case thoroughly prior to bronchoscopy and who is completely aware of the possibilities present. It must be emphasized that not every case of suspected pulmonary tumor will be benefited diagnostically by endoscopic study. Obviously, circular-appearing masses which are proven by x-ray study to be beyond the major bronchi will not yield any information to the endoscopist. The bronchoscopist is not only of help in localizing the lesion, but can be of considerable help in determining the operability of a given tumor. His investigations, therefore, must be complete in every detail. The importance of a satisfactory biopsy of any suspicious tissue cannot be over-emphasized. Adequate study in this fashion has yielded positive results in 70 to 89 per cent of cancer patients bronchoscoped.[14,15,24,25] However, it must be emphasized that the reason for these high percentages was because most of the cases were far advanced and inoperable. It could not be anticipated that such figures would apply to early, operable cases especially when it is known that the majority of the upper lobe tumors, and not all of the lower lobe tumors, would be visible early in their course. It has been estimated[15] that bronchoscopy, if performed early, will be negative in approximately 50 per cent of cases. Hence, a negative report in patients suspected of having a malignancy means only that other diagnostic measures should be performed promptly. It must be emphasized, at this point, that this procedure should be performed in cases, because of suggestive symptoms (such as persistent cough, localized expiratory wheeze, hemoptysis) even though there is no roentgenologic evidence of disease. Unfortunately, the finding of a bronchial carcinoma this early is quite rare.[14,26]

Case M. W., age 43, white male, physician, presented himself in 1943, with a history of a faint but definite wheeze, heard best—and usually only at night, for two weeks. He had had a minimal dry cough for many years. Chest examination revealed a fine expiratory wheeze confined to the left lower lobe. Roentgenographic investigation, including inspiratory and expiratory films, were negative. Bronchoscopy was advised but refused as he could not understand the justification for permitting himself to be bronchoscoped when the chest x-rays were normal. Two weeks later, in a mild coughing episode, he expectorated, for the first time, a small amount of mucoid sputum which was blood-tinged. That was sufficient to eliminate much of the doubt in his mind as to the necessity for further investigation, and bronchoscopy the following

day revealed a small tumor in the left lower lobar bronchus, which on biopsy was proven to be a squamous cell carcinoma. This was followed by a pneumonectomy by Dr. Brian Blades. The patient is alive today and has returned to his dermatological practice.

Bronchography. In cases where a bronchial lesion is suspected but is beyond the visualization of the bronchoscopist, the use of radio-opaque solutions (lipiodol) may be used to demonstrate stenosis.[27]

Examination of Sputum for Cancer Cells. This procedure, which has been used only occasionally for many years, has assumed increasing importance by the work of Papanicolaou.[28] Since most primary carcinomas of the lung are bronchogenic, they tend to exfoliate cells into the bronchial lumen. The cytologic study of sputum for neoplastic cells is rapidly being accepted as a valuable aid in the diagnosis of cancer of the lung. However, it must be stressed that the pathologist examining the slides must be particularly trained in the recognition of these cells. The importance, also, of making and thoroughly examining several smears of each specimen cannot be over-emphasized. And, just as in the case of tuberculosis, more than one specimen should be collected for study should the original ones be negative. In general, carcinoma cells are much larger than the normal cells and may show extreme variation in size. The nucleus is very large in relation to the amount of cytoplasm and are generally hyperchromatic and show a course chromatin network. In many, there will be seen large, multiple nucleoli of irregular shape and size. Farber, *et al.*,[29] studied sputum specimens in 66 proved cases of carcinoma. Positive results were obtained in 82 per cent. In their experience, as well as that of others,[30] sputum and bronchial secretions have proved equally satisfactory. Herbut and Clerf,[31,32] however, noted superior results when specimens removed at bronchoscopy were studied. In those cases where secretion cannot be obtained from the bronchus, 2 to 5 cc. of saline solution may be introduced into the bronchus and then aspirated. One hundred and eighteen cases of lung carcinoma were studied by this method.[26] Neoplastic cells were found in approximately 90 per cent of these cases. In the same group a positive biopsy was obtained by the bronchoscope in approximately 45 per cent. Neoplastic cells were found in 43 cases in which the bronchoscopic examination was completely negative. In another series, exfoliated cancer cells in the expectorated secretions provided the only preoperative microscopic evidence of cancer in 29 of 74 cases of bronchogenic carcinoma in which surgical exploration was carried out.[30]

Pleural Fluid. Pleurisy with effusion has been found with varying frequency in different series of cases of bronchogenic carcinoma.[2] In Ochsner's collected series[17] the pleura was involved in approximately 30 per cent. The fluid may be either serous or hemorrhagic. The onset of the effusion is usually insidious and accompanied by pain and dyspenea. Effusions are more frequently observed in association with tumors situated near the pleura and tend to occur late in the disease. Of Tripoli and Holland's[9] series of 195 cases of cancer of the lung, 42 (21.5 per cent) had an associated pleural effusion, thirty-four of which were hemorrhagic. Carcinoma cells could only be found in three of the hemorrhagic cases and in only one of the straw-colored effusions. In Adam's series of 157 cases,[13] 26, or 16.5 per cent, had an associated pleural effusion. Carcinoma cells were only found in five instances. Although it is generally true that bloody pleural fluid in a patient in the cancer age group is highly suggestive of malignancy of the lung, it is not an infallible indication, because it can also be caused by infarct or an inflammatory reaction.

Aspiration Biopsy. Although this procedure has been advocated[9,10] as a diagnostic measure in suspected cancer of the lung, Ochsner,[12] Adams,[33] Overholt and Wilson[34] are of the opinion that this should never be used except in cases that are obviously inoperable and then only when the lesion is peripheral. The danger of implanting metastases in the pleura and chest wall,[12] and the possibility of hemorrhage and infection are all potential complications which cannot lightly be disregarded.

Thoracotomy. An occasional case will be encountered in which no diagnostic approach other than thoracotomy will be decisive. In a series of 200 cases of exploratory thoracotomy performed by Grow, Bradford and Mahon,[35] there was no mortality and minimal morbidity. Of 86 circumscribed parenchymal lesions whose diagnosis could not be established before operation, 20 were found to be malignant. Because of the necessity for early op-

eration in every case of malignancy, physicians, according to Overholt and Wilson,[34] should adopt an attitude towards this procedure similar to the well established abdominal exploration for unexplained abdominal masses. Ochsner[21] and Adams[33] are also in agreement that thoracotomy is justified in cases suspected strongly of having a malignancy if diagnostic procedures done cannot prove or disprove its presence. The importance of early operation is increased by the facts that in many cases an accurate determination of malignancy or benignancy cannot be made before operation, and that delay in operating in the case of those tumors that happen to be malignant often results in their becoming inoperable.

TREATMENT

The only curative treatment of bronchogenic carcinoma is surgical extirpation. The method of choice is removal of the entire lung on the affected side even though the lesion may apparently be limited to a single lobe.[11,12,36,37,38] It is only by complete excision of the entire lung that the regional lymph nodes can be adequately removed.

Irradiation is not justifiable in operable cases of bronchogenic carcinoma. However, it may be used as a palliative procedure and may be of value in hopeless cases in the alleviation of symptoms. Widman,[39] in a control group of 119 cases receiving no therapy, found that none lived as long as one year. He treated 167 cases with x-ray therapy and noted that 18 lived 12 months or longer and 5 lived two to six years. Craver,[10] Leddy[40] and King[41] likewise noted that in some of their cases treated by means of x-ray, life was prolonged, and the patients were made more comfortable.

Recently, Skinner, Carr and Denman[42] treated 17 inoperable cases of lung cancer with methyl-bis, and noted that the majority of the cases temporarily gained in weight and strength and, to varying degrees were relieved of pain. The dose given was 0.1 mg. per kilogram of body weight, given intravenously once daily for four days. They felt that the combination of methyl-bis and x-ray therapy might probably offer superior palliative therapy than the use of either of the two used alone.

CONCLUSIONS

1. Bronchogenic carcinoma is a common lesion and represents about 10 per cent of all carcinomas.
2. It is a disease predominant in the male sex and is most frequently found after the age of 40.
3. There is no characteristic clinical picture. The presence of unexplained pulmonary symptoms (cough, hemoptysis, wheezing, chest pain) persisting in a man beyond the age of 40 should make one suspect bronchial carcinoma.
4. All possible diagnostic procedures must be promptly utilized in an effort to arrive at the correct diagnosis.
5. Cytologic examination of the bronchial secretion offers much promise in the early diagnosis of bronchogenic carcinoma.
6. Clinical improvement with antibiotic therapy is not sufficient evidence to eliminate the possibility of an underlying malignancy. No case with a pulmonary lesion should be discharged from one's observation until an etiological diagnosis has been made, or complete resolution has occurred roentgenographically.

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Wainwright Building.

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia
and the
University of Virginia Hospitals

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: 35

This 70 year old colored female was admitted to St. Philip Hospital with the chief complaint of abdominal pain of three weeks' duration. She stated that she had been in good health until she was suddenly taken ill three weeks prior to admission with crampy pain in the abdomen followed by intermittent vomiting and accompanied by anorexia and abdominal distention. The abdominal pain persisted for three weeks and was never localized. There was no accompanying diarrhea. The bowel movements had been scanty for the three weeks prior to admission and the last one was four days before entry into the hospital. There had been some weight loss over a period of several weeks. The stools had been tarry for about four weeks, but there had been no fresh blood. After further questioning the patient stated that she had vomited coffee ground appearing material one time during the present illness.

Past History: Nine years prior to the present illness the patient had developed exertional dyspnea. Five years ago she had an episode of congestive failure which was treated with digitalis and had been fairly well controlled since that time. She had taken no digitalis for 3 weeks prior to hospitalization. The patient had had no surgical operations. She gave a history of having indigestion for one year and said that she had had a poor appetite for several years. She habitually took laxative and there had been no recent change in her bowel habits. There had been no pregnancies and menopause had occurred uneventfully 23 years previously.

Physical Examination: Temperature 97°, pulse 112, respirations 22, blood pressure 122/62. On admission to the hospital the patient appeared to be a fairly well developed, poorly nourished, elderly, colored female showing evidence of severe dehydration and moderate abdominal distress. There was no distention of the neck veins. The chest was emphysematous. The lungs were clear except for a few rales at the left base posteriorly. The heart was enlarged with the point of maximum impulse diffuse and the left border of dullness at the anterior axillary line in the 6th intercostal space on the left. The rhythm was regular and the rate 112. There was a soft apical systolic murmur. The abdomen was markedly distended and tympanitic. There was no abdominal tenderness. No masses or organs could be palpated. There was no free fluid demonstrable. No hernia could be made out. Peristalsis was high pitched and tinkling. Rectal examination revealed a large amount of hard feces, but no stricture or tumor. Vaginal examination revealed no significant abnormalities. There was 1 plus edema of the extremities.

Laboratory Work: White blood count 10,300 with 72% polys. Hemoglobin 11 grams, NPN 49, serum chlorides 82 mEq. per liter, CO_2 combining power 27 mEq. per liter. X-rays of the abdomen revealed distention of loops of small bowel with fluid levels seen in the upright position. There was very little gas in the colon.

Course in the Hospital: Shortly after admission the patient was given cleansing enemas and a proctoscopic examination was performed, but no abnormalities noted. She was then treated with bed rest and oxygen by tent and was started on large doses of penicillin and streptomycin intramuscularly. Because of what appeared to be mild congestive failure, she was digitalized with 1.6 mgs. of Cedilanid intravenously. She was also given 500 cc. of blood intravenously and a Miller-Abbott tube was inserted for intestinal decompression. On the day after admission an electrocardiogram showed auricular fibrillation. She was given parenteral fluids by hypodermoclysis with hyaluronidase and the Miller-Abbott tube was removed and reinserted. On the third hospital day there appeared to be no appreciable decompression of the bowel after 24 hours of Wangensteen suction applied to the Miller-Abbott tube, and so operation was undertaken. Under regional novacaine block, a right rectus abdominal

incision was made and the point of obstruction was found in the distal ileum which was thought to be cicatricial in nature. Because of the patient's poor condition a Stamm type enterostomy was performed just proximal to the point of obstruction and the enterostomy tube was brought out through a stab wound in the right lower quadrant. Post-operatively the patient seemed to do somewhat better and began gradually to deflate as the enterostomy tube drained. However, she ran a febrile course after operation and penicillin and streptomycin were continued. On the 5th post-operative day subcutaneous emphysema was noted extending from the head to the mid-abdomen on the right. She developed generalized edema and there was a progressive decline in the serum chloride level to a low value of 77 mEq. per liter on the 8th post-operative day. Intravenous infusions of 5% sodium chloride and of concentrated albumin were given and it was thought that the massive edema was due to salt depletion and hypoproteinemia. Potassium chloride was administered by mouth. The septic temperature curve persisted and she was given aureomycin with a temporary decline in the fever. On the 10th post-operative day feces began draining around the enterostomy tube. The subcutaneous emphysema persisted and x-rays were said to show a small amount of pneumothorax on the right. On the 10th post-operative day the temperature rose to 107° and the patient expired on the 11th post-operative day.

DISCUSSION BY DR. GUY W. HORSLEY*

In these cases I prefer to read the history that has been given to us, make comments as we go along, and then at the end try to arrive at some rational diagnosis.

This patient, 70 years old, was admitted to St. Philip Hospital with the chief complaint of abdominal pain of three weeks' duration. She stated that she had been in good health until she was suddenly taken ill, three weeks prior to admission, with cramping pains in her abdomen, followed by intermittent vomiting, and accompanied by anorexia and abdominal distention. The abdominal pain persisted for three weeks and was never localized. There was no accompanying diarrhea. The bowel movements had been scanty for three weeks prior to admission, and the last one was four days prior to entry into the hospital. There had been some weight loss over a period of several weeks. The stools had been tarry for about four weeks. The patient stated there had been no fresh blood in her stools, and that on one occasion she had vomited coffee ground appearing material.

From the history it seems as if she had some gastro-intestinal lesion—vomiting coffee ground appearing material and passing tarry stools would indicate she had gastro-intestinal bleeding, possibly from the stomach or duodenum.

The Past History: Nine years prior to the present illness the patient had developed exertional dyspnea. Five years ago she had an episode of congestive failure which was treated with digitalis and had been fairly well controlled since that time. She had taken no digitalis for three weeks prior to hospitalization. The patient had had no surgical operations. She gave a history of having had indigestion for one year and said that she had had a poor appetite for several years. She habitually took laxatives and there had been no recent change in her bowel habits. There had been no pregnancies and menopause had occurred uneventfully 23 years previously.

The Physical Examination: Temperature 97° pulse 112, respirations 22, blood pressure 122/62. On admission to the hospital the patient appeared to be a fairly well developed, elderly, colored woman, showing evidence of severe dehydration and moderate abdominal distress. There was no distention of the neck veins. The chest was emphysematous. The lungs were clear except for a few rales at the left base posteriorly. The heart was enlarged with the point of maximum impulse diffuse and the left border of dullness at the anterior axillary line in the 6th intercostal space on the left. The rhythm was regular and the rate 112. There was a soft apical systolic murmur. The abdomen was distended and tympanitic. There was no abdominal tenderness. No masses or organs could be palpated. There was no free fluid demonstrable. No hernia could be made out. Peristalsis was high pitched and tinkling. Rectal examination revealed a large amount of hard feces but no stricture or tumor. On vaginal examination there were no significant abnormalities noted. There was 1 plus edema of the lower extremities.

From the history and physical findings, it is ob-

*Associate Professor of Surgery, Medical College of Virginia, Richmond.

vious that the patient has some type of intestinal obstruction, the cause of which seems to be of a chronic nature. She has had no abdominal operations, and we very seldom see acute intestinal obstruction which develops without a previous abdominal operation, unless there is some type of polypoid tumor, or a volvulus or intussusception. The patient evidently has not had an intussusception or volvulus as this has been a prolonged chronic affair.

The Laboratory Work: The white count was 10,300 with 72% polys., hemoglobin 11 grams, NPN 49, serum chlorides 82 mEq. per liter, CO_2 combining power 27. X-rays revealed distention of loops of small bowel with fluid levels seen in the upright position. There was very little gas in the colon.

This indicates, so far, that the patient has intestinal obstruction and from the X-ray apparently the obstruction is in the small bowel. We would have thought that in a patient of this age with a chronic obstruction the cause would be from a carcinoma of the large bowel. From the X-ray shown here, the obstruction is in the small bowel and not the large bowel.

Course in the Hospital: Shortly after admission the patient was given a cleansing enema and a proctoscopic examination was performed, but no abnormalities were noted. She was then treated with bed rest and oxygen tent, and was started on large doses of penicillin and streptomycin intramuscularly. Because of what appeared to be a mild congestive failure, she was digitalized. She was also given 500 c.c. of blood intravenously, and a Miller-Abbott tube was inserted for intestinal decompression. On the day after admission an electrocardiogram showed auricular fibrillation. She was given parenteral fluids by hypodermoclysis with hyaluronidase and the Miller-Abbott tube was removed and reinserted. On the third hospital day there appeared to be no appreciable decompression of the bowel after 24 hours of Wangensteen suction applied to the Miller-Abbott tube, and so an operation was undertaken. Under regional novocain block a right rectus abdominal incision was made and the point of obstruction was found in the distal ileum, which was thought to be cicatricial in nature. Because of the patient's poor condition a Stamm type enterostomy was performed just proximal to the point of obstruction and the enterostomy tube was brought out through a stab wound in the lower quadrant.

It is rather hard to see how cicatrix in the terminal ileum could cause bleeding, vomiting of coffee ground material or passing of old black blood or tarry stools, unless there were some other associated gastro-intestinal lesion with this condition. Cicatricial contraction of the terminal ileum is practically always inflammatory, possibly tuberculous, or, occasionally typhoid, or it may be one of the healed nonspecific ulcers in that area. Apparently, as it is described here, the cicatricial contraction of the distal ileum did not develop from nor was it caused by intraperitoneal adhesions.

Post-operatively, the patient seemed to do somewhat better and began gradually to deflate as the enterostomy tube drained. However, she ran a febrile course after operation, and penicillin and streptomycin were continued. On the 5th post-operative day subcutaneous emphysema was noted, extending from the head to the mid-abdomen on the right, a rather unusual complication.

She developed generalized edema and there was a progressive decline in the serum chloride level to a low value of 77 mEq. per liter on the 8th post-operative day. Intravenous infusions of 5% sodium chloride and of concentrated albumin were given, and it was thought that the massive edema was due to salt depletion and hypoproteinemia. The use of hyaluronidase with the hypodermoclyses was thought to have caused increase in the edema because of protein deficit and increased venous pressure. Potassium chloride was administered by mouth. The septic temperature curve persisted and she was given aureomycin with a temporary decline in the fever. On the 10th post-operative day feces began draining around the enterostomy tube. The subcutaneous emphysema persisted and X-rays were said to show a small amount of pneumothorax on the right side. On the 10th post-operative day the patient's temperature rose to 107°, and the patient expired on the 11th post-operative day.

It is most interesting to know what caused the emphysema. It could have been caused by one of several things: We could consider that this patient had obstruction to the terminal ileum from a tuberculous ulcer, and she may have developed a spontaneous pneumothorax during anesthesia, with some emphysema in the mediastinum which did not show

up until later on. That is one of the possibilities, but from her history apparently she has had some upper gastro-intestinal symptoms other than the lesion described in her terminal ileum. She may have had a carcinoma of either the lower esophagus or the cardiac end of the stomach; if so, there may have been an injury or rupture of the cardiac end of the stomach or esophagus, with resultant infection or pneumothorax and the subcutaneous emphysema.

Another possibility is one that I have seen in one or two other cases, namely gas bacillus infection. We are not told what the patient's blood count was after operation, nor are we told one or two other things we would be interested in knowing. I have seen gas bacillus infection develop around an enterostomy tube where there had been some slight spilling, and that could cause the emphysema, the subcutaneous emphysema which extended, as recorded, on the right side of the abdomen from the mid-abdomen to the head. This origin is approximately where the enterostomy tube passed through the abdominal wall. She certainly could have had a septic process develop from a gas-forming type of organism, as she ran a very septic fever. However, in this case with the history and other reported findings, I would lean to the fact that the patient had some type of lesion in the upper gastro-intestinal tract, which either ruptured spontaneously, or possibly was injured when inserting one of the tubes, which caused infection, her febrile course, and the emphysema.

The other two possibilities which I mentioned just now must also be seriously considered.

What caused the obstruction? It may have been that the patient had an old partial intussusception which produced the scar, or she could have had the obstruction from metastasis, either from the pelvic organs or gastro-intestinal tract. Adhesions from old pelvic inflammatory disease which was entirely separate from her other gastro-intestinal conditions could have produced the obstruction.

Hospital Diagnosis: (1) Intestinal obstruction, acute, secondary to carcinoma of the cecum or stomach. (2) Arteriosclerotic heart disease.

Dr. Horsley's Diagnosis: Acute intestinal obstruction (1) secondary to metastasis either from the pelvic organs or gastro-intestinal tract or (2) adhesions from old pelvic inflammatory disease.

PATHOLOGICAL REPORT: DR. C. NEWTON VAN HORN*

At necropsy the body was that of a poorly nourished, elderly negro woman with subcutaneous emphysema in the anterior neck region, the anterior aspect of the thorax extending into the right axilla, the right anterior abdominal wall and the right suprapubic region. A fairly recent 15cm. surgical incision was present in the right para median line of the right lower quadrant, sutures intact and showing evidence of proper healing. In the right lower quadrant there was an open stab-type wound draining fecal contents. On incision of the skin of the abdomen in the midline, a fecal sinus was entered just above the symphysis on the right which communicated freely with the stab wound in the right lower quadrant. On tracing the sinus further it was found to extend laterally and posteriorly to the lateral margin of the flank, superiorly to the right rectus margin. This area showed extensive necrosis of the subcutaneous tissue with a fecal odor. On tracing out the stab-type wound it was found to enter into the distal ileum 20cm. from the ileo-cecal valve. The margins of the ileum at the ileostomy orifice showed necrosis and were attached to the anterior peritoneal wall by fibrinous adhesions. On opening the abdomen a generalized fibrinopurulent peritonitis was found and the terminal ileum was attached to the anterior abdominal wall. Approximately 3cm. distal to the ileostomy opening there was a constriction of the ileum which upon opening the intestine was found to be due to a fungating growth that infiltrated the wall and protruded into the lumen. It measured approximately 4x5cm. Microscopic examination of the tumor revealed an irregular bizarre glandular pattern. The cells were closely packed, showed hyperchromatic nuclei and a few mitotic figures. In the base there was invasion of the muscle wall by tumor cells associated with marked fibrous tissue proliferation. Sections from the margin of the ileostomy reveal extensive necrosis of the wall.

Both kidneys were enlarged weighing 340gms. and 300gms. The gross and microscopic pictures were those of acute (toxic) nephrosis and vascular scars. A solitary cyst (6cm.) was noted in the upper pole of the right kidney. Other findings of importance were generalized arteriosclerosis, prominent

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coronary sclerosis, myocardial fibrosis and cardiac hypertrophy (520gms.). The latter involved both sides of the heart. There was a prominent patent foramen ovale. The lungs showed moderate hypertrophic pulmonary emphysema. Also noted were multiple intraabdominal and pelvic adhesions; chronic cholecystitis with cholecystolithiasis and mild biliary cirrhosis.

PATHOLOGICAL DIAGNOSIS:

1. Post-operative status: Recent ileostomy for obstruction of ileum.
2. Subcutaneous fecal sinus communicating with ileostomy opening, and subcutaneous emphysema.
3. Generalized fibrinopurulent peritonitis.
4. Adeno-carcinoma of small intestine (ileum).
5. Multiple fibrous adhesions intraabdominal and pelvic.
6. Chronic cholecystitis with cholecystolithiasis.
7. Mild biliary cirrhosis.
8. Acute nephrosis of kidney.
9. Vascular scars of kidney.
10. Solitary cyst 6cm., right kidney upper pole.
11. Arteriosclerotic heart disease: Coronary sclerosis, myocardial hypertrophy and fibrosis.
12. Patent foramen ovale.
13. Emphysema of lungs.

Wide Scale Study of Incomes of Physicians Is Under Way.

The first full scale survey of physicians' incomes in nine years is under way. The study is being made jointly by the Bureau of Medical Economic Research of the American Medical Association and the Office of Business Economics of the United States Department of Commerce. The survey will cover 125,000 doctors, or about 62.5 per cent of the nation's total of 201,278.

Selection of the names will be from the punch card files of the Bureau of Medical Economic Research by a formula which eliminates any partiality. To every other name will be sent a questionnaire requesting income information for 1949.

Of the other approximately 100,000 physicians every fourth name will be chosen. To 10,000 of these will go the same type of questionnaire. The other 15,000 will receive a long form sheet, requesting information on income for the years 1945 through 1949. All are to be returned unsigned in franked envelopes.

Survey of Physicians' Incomes.

The Bureau of Medical Economic Research of the American Medical Association and the Office of Business Economics of the U. S. Department of Commerce are jointly conducting a survey of physicians' incomes—the first full-scale survey since 1941. There is evidence that the national averages in some surveys have been too high because physicians who do not have bookkeepers to fill out the questionnaires do not reply in sufficient numbers. Accordingly, the Bureau emphasizes the importance of all doctors, especially those with a relatively small practice, filling out the questionnaires. Every physician can be assured that the survey has no relation whatever to the operations of the U.S. Bureau of Internal Revenue.

The A. M. A. states that physicians will be doing the medical profession a service by filling out the forms and returning them as soon as possible.

THE DOCTOR'S CHANCE TO STIMULATE EARLY IMMUNIZATION

L. J. ROPER, M.D.,
State Health Commissioner of Virginia.

The importance of early immunization is being brought to the attention of parents by the recently adopted form for Notification of Birth Registration shown on this page.

It will be noted that in addition to serving as a record of birth registration—now generally required upon entrance to school—space is provided for recording the types and dates of immunizations. It is here that the private physician has his chance. Prompt reporting of the birth by the physician will result in early receipt by the parent of Notification of Registration. This in turn should remind the parent of the importance of immunization and should result in early contact with the family doctor.

This form fills the long felt need of a continuing record that accompanies the child to the physician's office, to preschool and school examinations and will aid the physician in determining what immunizations or booster doses are indicated. No longer will he have to question what immunizations the child may have had before coming to his attention.

VIRGINIA STATE DEPARTMENT OF HEALTH
BUREAU OF VITAL STATISTICS

NOTIFICATION OF BIRTH REGISTRATION

THIS IS TO CERTIFY THAT A BIRTH CERTIFICATE HAS BEEN FILED IN THE OFFICE OF THE STATE REGISTRAR OF VITAL STATISTICS, RICHMOND, VIRGINIA, FOR:

Name _____ Sex _____

Date of birth _____ Place of birth _____

Date filed _____ Vol. _____ No. _____

State Health Commissioner — *State Registrar of Vital Statistics*

This Certificate may be used as evidence of age and should be carefully preserved

WHEN CHILD IS INOCULATED AGAINST ANY DISEASE HAVE PROPER SPACE BELOW COMPLETED

	DATE	PHYSICIAN OR CLINIC
Smallpox		
Diphtheria		
Whooping cough		

V S 72 7-49—100M

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

The Problem of the Criminal Insane in Virginia.

Human behavior is of interest to everyone since it concerns the welfare of society and of the individual. Laws have been enacted to protect the welfare, comforts and rights of the individual and when these are transgressed a suitable punishment is prescribed, varying from a fine for overparking to the death sentence for murder. If a person is mentally ill to the degree of legal incompetence the Code of Virginia (and those generally for the country) provides that he may not be punished. The term "insane" represents legal and not psychiatric terminology. The following comments in reference to the handling of this problem, that of the criminal insane in Virginia, may be of interest.

The Virginia Code provides that a person charged with a felony may be committed by a Court of Record to the department for the criminal insane at Southwestern State Hospital (if white) or at the Central State Hospital (if colored). He is so committed if the Court has reason to feel that there may be mental illness or defect. The Superintendent of the hospital is directed to make necessary observations and to submit a report to the Court as to the mental condition or as to whether the person is sane. If found to be sane, he is returned to the Court for disposition. If found to be insane and recovery takes place, this is reported and he is returned to the Court. There is an additional precaution that should the crime in question be one punishable by death the patient must be passed upon as recovered by two other State Hospital Superintendents.

What types of individual are sent for this study? At Southwestern State Hospital we now receive over eighty new patients a year committed for observation. A five year survey showed that about 22% were mentally defective, 18% were psychopathic personalities, 13.5% were alcoholic and 8.5% had organic psychoses. Crimes by those found to be psychotic were chiefly murder, robbery, crimes against nature and arson. The crimes are classified as being against property, against the person and against sex. Two-thirds of the psychopaths committed crimes against property, indicating egocentricity and a tendency to yield to immediate pleasure. A large number of these were not considered legally insane.

Following admission these patients are intensively studied. Anamneses are obtained from various sources and laboratory, psychological and psychiatric investigations are made. At Hospital Staff Meeting the official diagnosis is made. A majority are reported back to the Court as not having been insane or psychotic since admission. Those who manifest a mental illness receive treatment. In brief, treatment consists of psychotherapy by the physician through treatment interviews, electro or insulin shock, narcotherapy, recreation and occupational therapy. Here, as throughout the remainder of the hospital, funds are needed to provide personnel, equipment and supplies necessary to carry out a thorough rehabilitation and treatment program.

These criminally insane patients are all merely individuals who have become mentally ill and who usually have, as one of their symptoms, committed some anti-social act. Various factors such as aggressiveness, instability, aberrant sexual tendencies, mental subnormality, delusions, paranoid developments, etc., make them as a group potentially more dangerous. Of necessity they must be cared for in a maximum security building manned by adequate and capable personnel. Unfortunately, necessary careful supervision makes it unwise to utilize occupational or industrial therapy as much as would be desirable.

The above comments may invite questions concerning related subjects. There is a gradual convergence of the legal profession and psychiatrists in their attitude towards crime. Joint recommendations by the Committees of the American Psychiatric Association and American Bar Association have been directed towards introducing reforms in our legal procedures in relation to mental disorders. They have adopted the following very progressive and sound recommendations:

(1) Availability of a psychiatric service to assist the Courts in the disposition of offenders.

(2) That no felon be sentenced before there was filed as a part of the record a psychiatric report.
(3) That every penal or correctional institution have a psychiatric service.
(4) That there should be a psychiatric report on every prisoner convicted of a felony before he is released.
(5) A good administrative transfer and parole system in every state with psychiatric reports.

Health Inventory at 40 Helps Prevent Aging.

Forty is the time to take a health inventory. At this age, the insidious, progressive disorders so significant in later years generally first become manifest according to Dr. Edward J. Stieglitz of Washington, D. C. (April 8, 1950, J.A.M.A.)

Workers in medicine's newest field, geriatrics, are learning more about the limitations and needs of aging men and women. "Geriatric medicine, to be fully effective, must be largely preventive medicine."

The actual beginnings of common disorders such as hardening of the arteries, high blood pressure and degenerative arthritis occur far earlier than do their symptoms. "The detrimental effects of obesity in the later years of life can hardly be overemphasized."

Good diet is a powerful tool for keeping healthy and vigorous in later years, according to the author. Elderly people are more likely to suffer from lack of protein than from any other deficiency, and lack of protein is a significant factor in development of tissue wastage and anemia. Loss of calcium and phosphorus apparently is a factor in the characteristic wasting away of bone seen in senile persons.

"Unfortunately, the majority of older persons dislike or resent the prescription of milk. Milk is not only a valuable source of protein but also a major source of calcium. Moderate anemias are almost the rule in elderly persons. Milk is ordinarily deficient in iron. A great majority of elderly persons require supplemental administration of iron salts.

"Minor degrees of vitamin deficiency can be assumed to be the rule. Liberal additions of the vitamin B group and vitamin C to the diet of older persons can make for great improvement in general vitality and vigor. Vitamin supplementation through special preparations may be necessary in addition to a well planned adequate diet."

New Books.

The following are recently acquired books at the Library of the Medical College of Virginia, and are available to our readers under usual library rules:

Aggeller—Hemorrhagic disorder.
Assoc. research in nervous and mental diseases.—Epilepsy.
Carter and Thompson—Biochemistry in relation to medicine.
Engle, ed.—Menstruation and its disorders.
Fulton—Physiology of the nervous system. 3rd ed.
Gold—Quinidine in disorders of the heart.
Goepp and Flippin—Medical state board questions and answers. 8th ed.
Lyons and Woodall—Atlas of peripheral nerve injuries.
Rees, ed.—Modern practice in psychological medicine.
Sachs—Diagnosis and therapy of brain tumors and care of the neurosurgical patient.
Sheldon—Varieties of delinquent youth.
Stern—Principles of human genetics.
Umbriet, Burrus and Stauffer—Manumetric techniques and tissue metabolism.
Weisz—Principles of psychodynamics.
Williams and Miles—Infection and sepsis in industrial wounds of the hand.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Disease Control of the State Department of Health for March 1950 as compared with the same month in 1949, and for the period of January through March 1950 as compared with the same period in 1949, is as follows:

	Mar. 1950	Mar. 1949	Jan.-Mar. 1950	Jan.-Mar. 1949
Typhoid and paratyphoid	9	6	20	13
Diarrhea and dysentery	166	187	952	884
Measles	233	4,034	513	9,969
Scarlet fever	89	73	366	239
Diphtheria	23	9	68	42
Poliomyelitis	1	1	10	8
Meningitis	23	10	46	29
Brucellosis	7	5	13	14
Rocky Mountain spotted fever	0	0	0	0
Tularemia	2	2	16	7

VIRGINIA AND THE NATION

The Annual Summary for 1948 and 1949 for the United States, by State, published by the National Office of Vital Statistics, indicates how closely vital statistics for Virginia follow the pattern for the United States. It is interesting to note that, despite local differences in racial origin of population, economic status and extent of health programs, there is a basic biological similarity. This is indicated by the following table, which shows birth and death rates, infant mortality rates, and marriage license rates in Virginia and the United States as a whole.

	Birth Rate* Per 1,000 pop.		Death Rate* Per 1,000 pop.		Infant Mortality Rate* Per 1,000 pop.		Marriage License Rate Per 1,000 pop.	
	1948	1949	1948	1949	1948	1949	1948	1949
United States	24.3	24.1	9.9	9.7	31.6	30.9	12.5	10.8
Virginia	26.1	25.6	9.5	9.4	38.9	38.7	12.3	10.7

*Exclusive of stillbirths.

As indicated by the above table, the only rates which are significantly dissimilar are those for infant mortality. The reason for this is apparent when the Virginia rate is broken down by color. In 1948 the Infant Mortality Rate for White was 34.2 and for Colored 51.6.

"Infant mortality is the most sensitive index we possess of social welfare. If babies were well born and well cared for, then mortality would be negligible." (Sir Arthur Newsholme). Effort in this field in Virginia needs to be continued and intensified, but it is encouraging to review progress made in the past ten years as shown by the uniformity of percentage decrease in Infant Mortality Rates.

INFANT MORTALITY IN VIRGINIA

	1938	1948	% Decrease
TOTAL	66.1	38.9	41.1
White	56.7	34.2	39.7
Colored	89.9	51.6	42.6

Aureomycin Yields Good Results Against Parasitic Infestation.

Chronic infestation by the parasite that causes amebic dysentery is relieved by aureomycin, the new antibiotic drug, according to an article by Dr. John Davis Hughes of the University of Tennessee College of Medicine, Memphis. (J.A.M.A., April 8, 1950.)

Twenty-seven of a group of 38 patients treated with aureomycin were cured. Practically all others of the group had great relief from symptoms of the disease.

All 38 patients had been treated repeatedly for the disease with other drugs which failed to achieve satisfactory results.

Numerous persons in this country are infested with the parasite. Although some carriers have fatigue, nervousness and recurring diarrhea, others show no symptoms. However, carriers of the parasite are a considerable source of danger to other persons because of possible spread of amebic dysentery.

MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Medical Societies Representation in the State Legislature

The Medical Society of Virginia is represented in the State Legislature by two State Senators. It does not have a member in the House of Delegates.

Dr. W. C. Caudill of the Nineteenth Senatorial District is President of the Medical Society of Virginia.

Dr. James D. Hagood represents the Tenth Senatorial District and is Chairman of the Legislative Committee of the Medical Society of Virginia.

It is not easy for one who was not on the scene to realize how indebted the membership of the Society should feel to the time, interest, patience and effort of these two men during the 1950 session. The record speaks for them.

The work of the Legislative Committee including Dr. J. D. Hagood, *Chairman*, Clover; Dr. J. Frank Folk, Warrenton; Dr. Charles H. Henderson, Norton; Dr. Dean B. Cole, Richmond; Dr. Carrington Williams, Richmond; Dr. F. C. Pratt, Fredericksburg; Dr. J. Edwin Wood, Charlottesville; Dr. Frank A. Farmer, Roanoke; and Dr. George W. Schenck, Norfolk was well done. This was born of inconvenience, sacrifice and painstaking pursuit of the best interest of matters of concern to the membership. Congratulations and expressions of appreciation seem in order.

Members of the District Council Confer

Plans have been completed for a conference of the members of the District Council in 1950—the last one concluding on June 12.

Presidents, Secretaries, and Chairmen of Public Relations Committees of local medical societies are being invited to these with the view that the affairs of the Society may, in advance, be discussed with officers representing each local medical society in the State.

The presentation and discussion of these conferences are recorded and plans are under way to furnish each councilor, each member of the District Council, Presidents, Secretaries and Chairmen of Public Relations Committees of local medical societies with that which is construed to be the most important items of discussion.

The Washington Scene

Indications from Washington are that action on legislation of interest to the medical profession will not be decided in the immediate future. It seems that the bills are being carried through extensive hearings in the various committees with witnesses being heard in some instances.

The Federal Aid to Medical Education bills (H.R.5940 and S.1453) are still in the House Subcommittee where work is being continued on the details of amendments.

Hearings on H.R.6000, the Administration's version of the liberalization and extension of the Social Security Law, have been going on for some time in the Senate Finance Committee. Representatives from a wide range of business and industry have offered opposition before the Committee which seems to be affecting the status of the bill.

The implications of the so-called fringe bills (the back door approach to socialized legislation) are important to the medical profession. These seem to include the furtherance of the Administration's proposal of government medicine. The numbers of three of these are given above.

Another one is H.R.5182 which is "to consolidate certain hospital, medical and public health functions of the government in a United Medical Administration".

Word from the Washington office of the A.M.A. indicates that the Congressional situation is being observed closely. This should mean "stand by is the word".

The medical profession should not feel too badly over the way its interests have been treated in the 1950 session so far. It should be prepared to endorse or oppose, unitedly, at the proper time.

Dues

A discussion of the manner of the collection of dues of the State Society and of the AMA is always in order.

In this connection the President of the Medical

Society of Virginia, Dr. W. C. Caudill, recently appointed a committee on the subject "dues" to study the whole matter in Virginia and other states. This committee will no doubt have a report for the Council at its next meeting and the findings of the committee should be available to Virginia's representation in the House of Delegates of the AMA.

Outstanding Speaker for the 8th District Conference

Mr. Leonard E. Read, President of the Foundation For Economic Education, is scheduled as the guest speaker at the Conference for members of District Council at 8:00 P.M., May 5th in Arlington.

The Foundation is probably one of the foremost organizations of its kind in America today in the struggle to preserve the individual rights of the people. It is a non-profit and non-political educational institution which is supported purely through voluntary contributions and the sale of publications.

Mr. Read is generally recognized as one of the more outstanding speakers on this subject. In referring to the prominence and the good fortune of getting him to Virginia, suffice it to say, that he was the main speaker of the last annual national medical public relations conference.

The meeting is open to any member of the society and any lay guests the membership wishes to invite.

Anyone planning to be there should so advise Dr. John B. Leary, 3107 Columbia Pike, Arlington, Virginia.

Council Meets

Many committees and individual members of the Society frequently inquire of the next meeting of the Council.

The next meeting is tentatively scheduled at 3 P.M. at the Hotel Roanoke, Roanoke, Virginia, Thursday, June 15.

A.M.A. Dues

The answer to most questions arising over A.M.A. dues are perhaps found in the April 1, 1950 issue of the A.M.A. Journal, page 995.

This is well done in the form of questions and answers for the convenience of the membership.

Bibliotheca Obstetrica

PRISCIAN, THEODORE, 4TH CENTURY.

Harmonia Gynaeciorum of Moschion, Theod. Priscianus and Cleopatra. This may be found in both the collection of Caspar Wolf and that of Israel Spach.

Theodorus Priscianus, also called Octavius Horatianus, was the pupil of Vindicianus, the physician of the Emperor Valentinianus who reigned from 364 to 375. Sir Clifford Allbutt makes several references to him in *Greek Medicine in Rome.* He speaks of him as an archiater of Gratian and in another place as a mediocre follower of Galen.

EDITORIAL

Ignaz Phillipp Semmelweis (1818-1865)

PUERPERAL fever ranked high as a cause of death until the end of the 19th Century. The problem was of even greater magnitude than the mere numbers would indicate, for by its very nature the incidence of the disease was confined to those in their prime. Not so with most other deaths, for most of those occur among people who are already liabilities to society. Death of a new mother not only removes a useful member of society but all too frequently breaks up a home. For that reason a maternal death is a financial and social catastrophy as well as a medical one. In spite of this, nothing was done about it until the end of the first half of the 19th Century.

In 1843 Oliver Wendell Holmes read a paper "On the Contagiousness of Puerperal Fever" before a small medical club in Boston. It was published in the first volume of the *New England Quarterly Journal of Medicine and Surgery,* a journal with a limited circulation that went out of existence within a year. The article is what we would today call an epidemiological study and is a masterpiece. Nevertheless, what notice it attracted, was that of ridicule by professors of obstetrics, especially the two outstanding professors in Philadelphia. In 1855, Holmes reprinted the essay with an introduction in which he replied to his critics in "The Professor-at-the-Breakfast-Table's" best manner. Holmes was at this time Parkman Professor of Anatomy and Physiology at Harvard and a famous author. Nevertheless, his essay had no practical results. Even his own school was unimpressed, for it was not until 1883 that the Boston Lying-In Hospital took any steps to prevent the disease, and then, at the instigation of an ex-resident who had returned from Europe where he had been impressed by Briesky's work at Prague.

In the meantime, Semmelweis was studying the problem in Vienna, clinically and pathologically as well as epidemiologically. The University of Vienna had unwittingly set up a well controlled experiment. The obstetrical department of the Allgemeines Krankenhaus had two divisions, one for the instruction of doctors and the other for the instruction of midwives. The patients were assigned alternately to division 1 and division 2 on admission. There was no selection of cases. There was no difference in the care of the patients in the two divisions, except that those in division 1 were examined by students, often upon coming from the autopsy rooms without as much as washing their hands. The midwives, of course, did no autopsies. The mortality in division 1 was notoriously high, three or four times that of division 2. All that was needed was someone to interpret properly these results. Semmelweis, as assistant, was in charge of division 1 from July 1, 1846 to October 20, 1846, and again from March 20, 1847 until March 20, 1849. He noticed the similarity at autopsy of persons dying of pyemia and those dying of puerperal fever. He predicated that the students carried some morbid matter from the cadaver to the patient and ordered that they wash their hands in calcium chloride solution before making vaginal examinations. The mortality dropped from 9.92 per cent to about two per cent.

Semmelweis reported his observations before the Medical Society of Vienna. His theory had no better reception than the essays of Oliver Wendell Holmes in this country. Semmelweis was naturally neurotic and unstable and this was too much for his morbid sensitive nature. He returned to his native Hungary. Later he was appointed Professor of Theoretical and Practical Midwifery in the University of Pest, where in 1858 he published in the Hungarian language his first book on the etiology of child bed fever. In 1861, he published his great work, *Die Aetiology, der Bergriff und die*

Prophylaxis des Kindbettfiebers. He also carried on controversies by means of open letters with most of the teachers of obstetrics in Europe. In 1865, he was confined in an insane asylum and in a short while he died from an infected wound which he received while performing an autopsy. His work has recently been translated into English by Dr. Frank P. Murphy. His style is wordy and repetitious. It has been said that if Semmelweis had spent more time in stating clearly his views and less in argument, his book would be twice as good and half as long.

Much has been written about the man, although his works have been seldom read. Many have described him as one of medicine's martyrs. A minority maintain that his works show that his persecution complex was a part of his very nature and was a delusion, for the most part. Others maintain that he discovered no new facts about the etiology and prophylaxis of puerperal fever. Even the cleansing of the accoucheur's hands with chlorine solution had been advocated previously by Watson. Be that as it may, Semmelweis undoubtedly played an important part in the universal acceptance of asepsis in the treatment of parturition and, in that way, saved the lives of innumerable mothers. As so frequently happens, his worth was recognized after his death and a beautiful statue was erected to his memory in Budapest.

This is the 12th of a series of "Doctors for whom the public should be thankful".

Life Is One Grand Steeplechase

IN hunting country they have a form of amusement called a steeplechase, which is nothing more than a cross-country race over fences, hedges, ditches, creeks, etc., to a distnat object such as a church steeple. Life is like that, and success in life depends, in the first place, on the goal we choose, in the second place on whether or not we reach the goal.

We all start equally helpless and dependent and are confronted, almost before we get our breath, with hazards and tests as stiff and difficult as the hurdles and water jumps of Aintree at Liverpool. As we pass along, to the physical hazards are added mental and moral hazards. Smooth broad roads that lead to destruction branch off from the straight and narrow path. To either side are green pastures with purling brooks and flowers belonging to the Lotus and the Poppy families. Along the way, where the going is particularly difficult, there is a vast area of "social security". It is surrounded by a Ha-Ha wall that is scarcely noticeable from the outside. However, from the inside it is a formidable barrier and permits of no escape. The area within the frame work of this Ha-Ha barrier is flat and uninteresting. The animals therein are all regimented. They eat, sleep and propagate, but nothing more exciting than the dinner bell, three times a day, ever happens there. When one tires of the green pastures beside the still waters, one can take up his journey towards success, but not so with the area of social security. The Ha-Ha wall effectively prevents any escape.

The hazards and barriers are Nature's way of developing the race, and they make life worth living. It is true they eliminate many who are unfit, but they stimulate effort and they develop character. The physiology of the body politic is much like the physiology of the individual. What would happen to the individual if the protective effect of pain could be entirely eliminated. We have a ready made example in the maimed,

deformed leper who has the anesthetic form of the disease. The beneficent effect of effort and exercise for the individual is too well known to need any elaboration.

The hazards of Nature begin even before we are born. By a complicated chain of hormonal reactions, Nature selects a perfect egg out of a possible twenty or thirty thousand. She exposes this egg to a horde of forty to one hundred and twenty millions spermatozoa. Presumbly the best cell wins and the ovum becomes fertilized as it proceeds down the Fallopian tube. Immediately it is subjected to tests of invasiveness and of ability to obtain nourishment from its surroundings. Many fail at this stage and are never heard of. Even the mothers do not know that anything has happened. Rock and Hertig have shown that a big percentage of the ova at this early stage are defective. If the ovum succeeds in making a nest for itself in the succulent endometrium, its next great test is the formation of a placenta that is hormonally effective. Many fail at this stage which accounts for the frequency of abortion at about the third month. As the fetus grows, it puts more and more a burden on its host. Premature labor is one of the great problems of obstetrics and prematurity is one of the ten leading causes of death. Formerly syphilis was a common cause of premature labor and fetal death. This has practically been eliminated, but other causes, such as placenta previa, ablatio placentae, toxemia and little understood biological lesions remain.

Finally, after approximately 267 days the tested out mature fetus is ready for the great day when he is to make his bow to the world. Can he make it? Some two to three per cent fail to make this twelve to twenty-four hour test when he is subjected to tremendous stress and strain. Even if he comes out alive, he may be injured. Birth trauma is all too frequently met with. A minor form of this is a mashed nasal septum as the nose gets squeezed by a tense perineum. The nose surgeons find deviated nasal septa much more frequently in the first born. Modern obstetrics with anesthesia has greatly reduced the strenuousness of the test of being born. This is shown by the marked reduction of the neonatal mortality in the last twenty years. Formerly it was above six per cent as compared to two per cent at the present time.

The pediatrician now takes charge and reduces Nature's hazards in great fashion. In olden times the baby that survived the "second summer" had real stamina. Not only does the pediatrician feed the infant so that the weak one does about as well as the strong one, but he immunizes him so completely that children's diseases do not get a chance to test the modern infant. And so it goes through life. Except for poliomyelitis, all the great plagues have been conquered. The only way a person now can die is to wear out or die of some degenerative disease.

Evidently Nature's purpose is to make a perfect MAN and she goes about it with a prodigality that only Nature can afford. Man, on the other hand, is bent on producing men and women with lower standards of perfection. Sometimes we wonder if it is worth while.

Eight Hundred Years Before Moses

ONE of the treasures of the Louvre is the basalt stele containing the Code of Hammurabi. It is a beautiful stone, shaped like a canine tooth about 4½ feet long, entirely covered with cuneiform writing except at its tip. Here there is a bas-relief representation of Shamash, the sun god, giving the law to King Hammurabi who is standing. The carving is well done. Experts tell us this work dates back to the second millennium before Christ. As we sat looking at it, we were impressed as never before

with the abstract idea of time. When we see some prehistoric bone or weapon and are told by some scientist that it is so many million years of age, we have not been greatly impressed, but here within ten feet of where we were sitting is a beautiful object carved and inscribed by man some four thousand years ago. Here is the law of the land inscribed on stone, eight hundred years before Moses. There were vases and other objects of art in the same room that dated back to four thousand years before Christ, which showed there were cultured people in those days.

What has man accomplished in these six thousand years? Many civilizations have risen, flourished and disappeared and would be entirely forgotten but for the archeologists. Greece and Rome have left glorious ruins and a living literature. If historians would only tell us the why of all this, history could well be called a science.

Man has learned a great deal about the world he lives in. It is no longer flat and the giffons and dragons have all disappeared. He has learned a great deal about his own anatomy, physiology and pathology and is beginning to learn something about the workings of his own mind. Thanks to modern medicine, he has learned to live longer, and to modern physics and chemistry, to live easier. However, he still fights, kills and tortures, as of old.

SOCIETY PROCEEDINGS

Virginia State Board of Medical Examiners.

At the meeting of the Board held in Richmond in December, the following applicants were granted licenses to practice in this State on the basis of examination:

Dr. Gregory Peckham Carter, Newport News.
Dr. Wiley Holt Cozart, Richmond.
Dr. Joseph Geza Doboy, Richmond.
Dr. Julio Jimenez-Sierra, Lynchburg.
Dr. Henry Gershon Kupfer, Richmond.
Dr. John Henderson Stewart, Ho-Ho-Kus, N. J.
Dr. Charles Roger Sullivan, Portsmouth.
Dr. William Dunn Walker, Catawba Sanatorium.

The following applicants were granted licenses through endorsement of credentials:

Dr. Jesse Clyde Alley, Jr., Dante.
Dr. Howard Milton Ausherman, Chattanooga, Tenn.
Dr. Jefferson Davis Beale, Jr., Danville.
Dr. Silos O. Binns, Newport News.
Dr. Henry Boone, Norfolk.
Dr. M. Joseph Boyle, Grundy.
Dr. Homer Wilson Boysen, Arlington.
Dr. John Boyd Bullock, Richmond.
Dr. Warren Bernard Burch, Washington, D. C.
Dr. Milton Alexander Butts, Smithfield.
Dr. Robert Sargent Calkins, Ft. Belvoir.
Dr. William Canfield Carpenter, Bristol, Va.-Tenn.
Dr. Paul Benton Chapman, Winchester.
Dr. Harold Frederick Chase, Charlottesville.
Dr. Kenneth R. Crispell, Charlottesville.
Dr. Joseph Howard Early, Hillsville.
Dr. Lois Fox Fryer, Arlington.
Dr. Edwin Wagener Gerrish, Lynchburg.
Dr. Mary Elisabeth Case Gray, Veteran's Administration, Hampton.
Dr. Irene Freda Anderson Harris, Norfolk.
Dr. Verden Edward Hockett, Dahlgren.
Dr. William Eugene Hubbard, Winchester.
Dr. Lewis Karl Ingram, Stonega.
Dr. Edward Palmore Irving, Norton.
Dr. Reginald Coleman Jackson, Richmond.
Dr. Robert William Jessee, Honaker.
Dr. Harold S. Kolmer, Jr., Salem.
Dr. Benjamin H. Libien, Richmond.
Dr. Wolfram George Locher, West Reading, Pa.
Dr. Archibald Delgado McCoy, Wardensville, W. Va.
Dr. Joseph Tedford McFadden, Charlottesville.
Dr. Robert E. Martin, Washington, D. C.
Dr. Arthur F. Mangelsdorff, Plainfield, N. J.
Dr. Matthew Tallmadge Moorehead, Norton.
Dr. Seymour Fiske Ochsner, Richmond.
Dr. Laszlo Ormandy, Portland, Me.
Dr. William Parson, Charlottesville.
Dr. John Howell Peacock, Washington, D. C.
Dr. Warner Philip Portz, Washington, D. C.
Dr. Enos Ray, Leesburg.
Dr. Jack J. Rheingold, Washington, D. C.
Dr. Robert Nelson Ricketts, Lynchburg.

Dr. Leslie William Rose, Jr., Richmond.
Dr. Robert Kenneth Scott, Charlottesville.
Dr. John Greaton Sellers, Norfolk.
Dr. Randolph Tucker Shields, Jr., Staunton.
Dr. Louis Ernest Sigler, Jr., Roanoke.
Dr. Gerald Walker Smith, Portsmouth.
Dr. George Grant Stitzinger, Roanoke.
Dr. John R. Tietjen, Falls Church.
Dr. Morris Perry, Norfolk.
Dr. Joseph Emmett Walthall, III, Athens, W. Va.
Dr. William Jack Weaver, Jr., Alexandria.
Dr. Leonard Rudolph Wells, Jr., Ewing.
Dr. Thomas Ashton Wilson, Washington, D. C.
Dr. Joseph Leonard Witkowski, Norton.
Dr. George M. Wyatt, Washington, D. C.

Lynchburg Academy of Medicine

The March meeting of the academy, held on the 13th, was exclusively a business meeting.

The important action taken was the adoption of the report for the creation of a Grievance Committee, which was adopted practically unanimously. This follows as a suggestion for other Societies contemplating such an organization.

JOHN T. T. HUNDLEY,
Secretary

GRIEVANCE COMMITTEE

On March 2, 1950, the Committee on Public Relations met with Doctor Holcombe Hurt, the President of the Lynchburg Academy of Medicine, for the purpose of organizing a Grievance Committee.

Your Committee on Public Relations respectfully submits this outline for a Grievance Committee for your consideration and adoption:

The purpose of the Committee shall be to hear, investigate and decide upon the merit of complaints registered by patients or their responsible representatives relating to improper, unethical or unprofessional conduct or action, or excessive charges for professional services rendered by members of the Lynchburg Academy of Medicine.

This Committee will have no authority or responsibility to review, investigate, or decide matters involving professional ethics or problems in which only doctors are involved, and will deal only with those complaints which originate and come from the lay public.

Method—Complaints must be submitted in writing to the President of the Lynchburg Academy of Medicine, and by him referred to the Grievance Committee. . . . The Committee shall investigate the complaints fully and decide upon the merit or justice of the case. The method of investigation and hearing, and the defense submitted, shall be left to the decision of the committee, and may vary with the case under study. After careful and full investigation and study the committee shall decide upon the merit of the complaint, and shall report its decision in writing to the Board of Trustees. The Board shall review the findings and transmit its decision to the complainant and the doctor, or doctors, or the hospital involved. In the event either the complainant or the defendant are not satisfied with the decision, another hearing before the Board of Trustees of the Lynchburg Academy of Medicine may be requested by either, or the case may be referred to the State Grievance Committee.

The Grievance Committee shall be selected from a panel of ten (10) active members of the Academy of Medicine chosen by the Board of Trustees. Three (3) members of the panel shall be designated by the President of the Academy to serve as the Grievance Committee to hear a particular case. No member shall serve on the committee which has under investigation a complaint which relates to him, in which he has concern, or in which he cannot give a fair and impartial hearing.

Every member of the Grievance Committee, and of the Board of Trustees shall be sworn to secrecy, and following an investigation and final decision of a disputed case, all records pertaining to the case shall be destroyed.

(Signed)
JOHN WYATT DAVIS, JR., M.D., *Chairman*
JOHN T. T. HUNDLEY, M.D.
CLARENCE E. KEEFER, M.D.

Washington County Medical Society.

The meeting held at the Martha Washington Inn, Abingdon, January 19, marked the first anniversary of the re-establishment of this group. The Washington County Medical Society had been inactive since 1920.

The officers for the past year were: Dr. R. S. LeGarde, Damascus, President; Dr. Frederick Johnston, Abingdon, Vice-President; Dr. James M. Suter, Bristol, Secretary-Treasurer. It was felt by all present that the year had been a most successful one and at the present time there are twenty-five members. Average attendance for the year was 63 per cent.

It was noted at this meeting that one of the charter members Dr. S. H. Yokeley had died during the year.

Election of officers for the coming year was held at this time and the following were elected unanimously: Dr. John A. Wolfe, Abingdon, President; Dr. J. H. Hagy, Abingdon, Vice-President; and Dr. J. M. Suter, Bristol, was re-elected Secretary-Treasurer.

The Washington County Medical Society meets at the Martha Washington Inn, Abingdon, on the

third Thursday of each month at 6:30 p.m. All visitors are cordially invited to attend.

The Washington County Medical Society met at the Martha Washington Inn on February 16, with the following present: Drs. Stuart Catron, Gerhard Gabriel, Frederick Johnston, Rufus Morison, Catherine Smith, Phil Smith, James Suter, John A. Wolfe, Jack Wycoff, Rees Russell, W. E. Cline and W. R. Cline.

The speaker for the evening was Dr. Will Chapin, Richmond, who is a pediatrician with the Virginia State Department of Health. Dr. Chapin led a most interesting and informal discussion on rheumatic fever, discussing in particular the medical and public health aspects of the disease. Dr. Chapin had been in Bristol that day to conduct the rheumatic fever clinic which was held at the King's Mountain Memorial Hospital, February 16, under the auspices of the Washington County Health Department.

The Orange County Medical Society

Met at the James Madison Hotel at Orange on April the 3rd, at which time Dr. Byrd S. Leavell of the University of Virginia as invited guest spoke on "Some Aspects of Altered Physiology of the Spleen". The doctors and dentists of Culpeper as well as Orange County were invited to this meeting which was followed by dinner. Dr. H. C. McCoy and Dr. J. Garnett Bruce, both of Gordonsville, are president and secretary, respectively, of the Society.

Norfolk County Medical Society.

Marjorie Shearon, Ph.D., was the guest of this Society and its Auxiliary on the evening of April the 18th. Dr. Shearon is an analyst of Legislative and Public Opinion Trends and conducts a regular news service. Her topic on this occasion was the "Road of No Return". Following her interesting and timely talk, there was a question and answer period.

Tazewell County Medical Society.

At the regular bi-monthly meeting of this Society on February the 15th, the guest speaker was Dr. Frank Holroyd of Princeton, W. Va., who spoke on the subject "The A.M.A.'s Educational Program and How Your Local Society Can Help". Dr. J. W. Shawver and Dr. Mary Elizabeth Johnston, both of Tazewell, are president and secretary respectively.

The Warwick County Medical Society

Held its regular meeting on March the 14th, at which time Dr. Edward S. Ray, assistant professor of Medicine, and Dr. Frank P. Coleman, assistant professor of Surgery at the Medical College of Virginia, discussed "The Medical and Surgical Aspects of Pulmonary Hemorrhage".

A Public Relations Committee was appointed by the president, Dr. George S. Grier, III, and Dr. Franklin D. Freda, formerly of Lynchburg, was accepted for membership.

J. W. CARNEY,
Secretary

Roanoke Academy of Medicine

At the regular monthly meeting of the Academy on April 3, Sir Alexander Fleming, the discoverer of penicillin, spoke on The Search for Antibiotics. Dr. C. W. Mayo of the Mayo Clinic spoke on Carcinoma of the Rectum: Surgical Considerations.

The Scientific portion of the program was arranged and sponsored by the Gill Memorial Eye, Ear, and Throat Hospital. Dr. Marcellus A. Johnson, Jr., is President of the Academy, and Dr. William H. Kaufman is Secretary.

Rockbridge County Medical Society.

Dr. M. T. Vaden of Buena Vista is president of this Society and Dr. T. F. Kennan of Raphine the secretary.

Rockingham County Medical Society.

At the annual meeting of this society, Dr. George S. Row, Bridgewater, was elected president, and Dr. H. H. Helbert, Harrisonburg, secretary.

Richmond Academy of Medicine.

Dr. Harvey B. Stone, associate professor of surgery at Johns Hopkins University School of Medicine, Baltimore, delivered the fourth annual J. Shelton Horsley Memorial Lecture before the Academy on Tuesday evening, April 11. Dr. Stone, a foremost authority on surgery of the colon, selected as his subject "Surgical Aspects of Certain Non-Malignant Colon Conditions: Chronic Non-Specific Ulcerative Colitis, Diverticulitis, Megacolon".

The J. Shelton Horsley Memorial lecture, presented annually at the Academy, was established in memory of Dr. Horsley by his son, Dr. Guy W. Horsley.

NEWS

The Annual Meeting—Medical Society of Virginia.

Plans are progressing well for the Roanoke meeting of the Medical Society of Virginia, October 8-11. Cards were sent all members the first of April, reminding them that those who wish to present papers at that time should send their titles with short abstracts to the office of the Society, by or before May the 15th.

Dr. W. C. Caudill, President, after discussion with the Program Committee, has invited and had acceptances from Senator Harry F. Byrd for Monday evening, the 9th, and at the suggestion of the Academy of General Practice, Dr. Franklin D. Murphy, dean of the School of Medicine in Kansas City, will be the guest speaker the 10th. On Wednesday morning, there will be a symposium on Progress in Medicine, which will be conducted by Dr. George Thomas Pack of New York City, Dr. Russell Haden of Crozet, Dr. William Parson of the University of Virginia and Dr. Harvey B. Haag of the Medical College of Virginia. Dr. Kinloch Nelson and Dr. J. Edwin Wood, Jr., of the two medical schools will have charge of a clinico-pathological conference. These in addition to the volunteer papers should form a good program and it is hoped many members may attend.

10,000 Physicians Expected at A.M.A. Annual Meeting.

Approximately 10,000 physicians are expected to attend the 99th annual meeting of the American Medical Association in San Francisco, June 26-30.

Attracting the doctors will be the scientific sessions and scientific and technical exhibits. More than 300 papers devoted to medical and surgical progress will be presented by outstanding physicians from all over the world.

Meetings of the House of Delegates will be held in the Palace Hotel, and will be presided over by Dr. F. F. Borzell of Philadelphia, speaker of the House.

The installation of Dr. Elmer L. Henderson of Louisville, Ky., as president will take place on the evening of June 27. He will succeed Dr. Ernest E. Irons of Chicago. The annual award for distinguished service to the medical profession will be made on that occasion, the winner being selected by vote of the House of Delegates the day before. The presidential ball will be held June 29. Both events will be in the Palace Hotel.

San Francisco's Civic Center, a group of buildings which has housed some of the largest national conventions, will be used for the scientific portion of the meeting. Scientific sessions, which will cover all phases of medicine and surgery, will be held in several buildings, including the High School of Commerce and Masonic Hall. A technical display by more than 280 exhibitors will be staged in the Civic Auditorium.

General scientific meetings will be held on the first two days of the convention. Sectional groups will meet on the next three days.

Of educational interest also will be the presentation of surgical procedures over a closed television circuit. The operations will be performed in one of the local hospitals and transmitted in color to 20 receivers in Masonic Hall.

Virginia Psychosomatic Forum Initiated.

A Psychosomatic Forum, sponsored jointly by the Department of Medicine of the University of Virginia and by the American Psychosomatic Society, will be given at the Medical School Amphitheatre at Charlottesville on Friday, May 26, 1950, beginning promptly at 2:00 P.M.

The Forum, which is the first of an extended series to be organized in Virginia, will present the following program:

1. Obesity as a Medical Problem—H. B. Mulholland, M.D.
2. Obesity, a Disturbance of Homeostasis—William Parson, M.D.
3. Emotional Factors in Obesity in Children—Frank Curran, M.D.
4. Psychological Aspects of Obesity in Adults—David C. Wilson, M.D.
5. Suggested Approaches to Treatment of Obesity—Andrew D. Hart, M.D.
6. Discussion Period.

Dr. Andrew D. Hart of the University is chairman of the Forum. All physicians are cordially invited to attend.

Medical College of Virginia News.

Sir Alexander Fleming, world-famous discoverer of penicillin, spoke at the College, April 11, on "Modern Anti-biotic Research".

A program to honor Dr. W. T. Sanger, president, was held in the Student Social Center of the College on April 27. He succeeded the late Dr. Stuart McGuire as president of the college twenty-five years ago, and was the first full-time president upon the recommendation of Dr. McGuire.

The Medical College of Virginia Hospitals will again this year observe National Hospital Day on May 12 with an Open House. Plans are being made to take approximately 500 people on tours of the hospitals of the College. This will be the third year the hospitals have observed National Hospital Day.

The third annual Stoneburner lecture series at the College was given by Dr. Walter L. Palmer, professor of medicine at the University of Chicago. These lectures are given in memory of Dr. Lewis T. Stoneburner, III, a Richmonder who was lost over Algiers, October 10, 1943.

The library of the College has been named the Tompkins McCaw Library after members of two families who have given more than 100 years of service to the institution. In announcing the new name Dr. W. T. Sanger, president of the College, said that eventually all of the buildings of the College will be named after individuals.

The three members of the Tompkins family honored are Dr. Christopher Tompkins, Dr. James McCaw Tompkins and Captain Sally Louisa Tompkins. Honored in the McCaw family are Dr. James Brown McCaw and Dr. Walter Drew McCaw.

Dr. Laurence H. Snyder, dean of the graduate school of the University of Oklahoma and Professor of medical genetics, gave a lecture to the student body March 28 on "Heredity in Modern Life."

Seventeen surgeons from Wisconsin, all members of the Wisconsin Surgical Club were guests of the surgeons at the Medical College of Virginia two days in March. The MCV surgeons under the direction of Dr. Herbert C. Lee planned a two day program for the guests.

Dr. Lehman Honored.

On the opening of the State's 1950 cancer crusade drive in Charlottesville on March the 31st, Dr. Edwin P. Lehman, head of the gynecology department of the University of Virginia and a former national president of the American Cancer Society, was presented the Society's 1950 medal for his work to control the disease. Dr. Guy R. Fisher of Staunton, chairman of the State drive, was among the 200 persons who attended the kick off dinner.

Dr. Kenneth N. Byrne,

Who has been practicing in Lexington since his return from service in the war, has moved to Marion, South Carolina, where he is joining a new 3-man group and will be in charge of internal medicine.

The Frank N. Hack Lecture.

The annual Frank N. Hack lecture at the Winchester Memorial Hospital was given on April 5, by Dr. Charles W. Mayo of the Mayo Clinic, Rochester, Minnesota. Dr. Mayo's subject was "Diagnosis, Surgery and Outlook in Cancer of the Right Colon".

This is the second Hack lecture which was established by the Staff and Executive Committee of the Winchester Memorial Hospital as a tribute to Mr. Hack and in appreciation of his numerous contributions to the hospital.

A.M.A. Golf Tournament—Monday, June 26

Dr. C. E. Shannon, Chicago, President of the American Medical Golfing Association, announces that the 34th Tournament will be held on the two very attractive golf courses of the Olympic Golf Club, San Francisco, on Monday, June 26, the opening day of the 1950 A.M.A. Annual Session.

Fellows planning to participate should send, as soon as possible, their name, handicap, and section in medicine in which they will register to Secretary Bill Burns, 2020 Olds Tower, Lansing 8, Michigan. This will assist the local committee in making the necessary arrangements. The starting committee will assist players from the different states to arrange games with like handicaps, age, and specialty. The detailed program of the AMGA Tournament will appear in the Convention Number of the AMA Journal.

Applications for membership may be obtained by writing to Secretary Burns, 2020 Olds Tower, Lansing 8, Michigan.

Dr. Alvarez to Edit the Family Doctor Journal.

Dr. Walter Alvarez, senior consultant in the Di-

vision of Medicine in the Mayo Clinic and widely known author and medical lecturer, has been appointed medical editor of "GP", published by the American Academy of General Practice. He succeeds Dr. F. Kenneth Albrecht, who died recently following an automobile accident.

Dr. Alvarez is one of the nation's best known physicians and has been referred to as the "Twentieth Century Osler" by those who would compare him with the famous Johns Hopkins physician who was knighted by the British king. Having reached the age of retirement at the Mayo Foundation, Dr. Alvarez is moving to Chicago where he will assume his new duties. The journal is published by the Academy's headquarters office in Kansas City, Missouri.

News from University of Virginia, Department of Medicine.

Recent visiting lecturers at the University of Virginia Department of Medicine were:

Dr. John P. Peters, Yale University. Subject: "The Incidence and Correction of Some Electrolyte Disturbances in Clinical Medicine."

Dr. Herbert M. Evans, University of California. Subject: "Unsolved Problems in Anterior Pituitary Physiology."

Dr. Merrill C. Sosman, Professor of Radiology, Harvard Medical School, was guest speaker at the annual lecture and banquet of the University of Virginia Chapter of Alpha Omega Alpha on March 27th. Dr. Sosman spoke on the subject, "Pituitary Tumors as seen by the Roentgenologist".

The following were elected to membership in A.O.A. at this time:

From the Faculty: Dr. Chalmers L. Gemmill.

From the Alumni: Dr. Charles S. Venable and Dr. Frank W. Foote.

From the Students: Frank Bilisoly, John C. Buchanan, Charles H. Sackett and William P. Wharton.

The annual meeting of the Virginia Chapter of the American College of Chest Physicians was held at the University of Virginia Department of Medicine on March 30. The following program was presented:

"Tuberculosis of the Larynx"—Dr. George Ewart and Dr. George Welchons, Richmond.

"Pulmonary Lesions Simulating Tuberculosis"—Dr. Woodbury Perkins, University of Virginia.

"Resection for Pulmonary Tuberculosis"—Dr. F. P. Coleman, Richmond.

"The Problem of Lung Cancer"—Dr. E. C. Drash, University of Virginia.

"Vascular Anomalies of the Lung"—Dr. Brian Blades, Professor of Surgery, George Washington University School of Medicine, Washington, D. C.

The American College of Chest Physicians

Will hold its sixteenth annual meeting at the St. Francis Hotel, San Francisco, California, June 22 through 25. An interesting scientific program has been arranged for the meeting.

The Board of Examiners of the American College of Chest Physicians announces that the next oral and written examinations for Fellowship will be held in San Francisco, June 22, 1950. Candidates for Fellowship in the College who would like to take the examinations should contact the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

Dr. Dean B. Cole, Richmond, serves as the Regent of the College for the States of Maryland, District of Columbia, Virginia and West Virginia.

Dr. William Bickers,

Until recently of Richmond, has been appointed as chairman, Department of Obstetrics and Gynecology and Director of the Woman's Clinic of The Bishop de Goesbriand Hospital of Burlington, Vermont. He entered upon his duties there on March 1.

Dr. Claude Marshall Lee, Sr.,

Founder and retired Director of St. Andrew's Hospital, Wusih, China, is Chief of out-patient service at the Station Hospital, Fort Belvoir, Virginia. Dr. Lee was for a number of years secretary of the China Section of the American College of Surgeons.

Dr. J. W. Witten

Of North Tazewell is slated to play one of the leading roles in Tazewell County's sesquicentennial celebration, June 25-28, when he will impersonate his pioneer ancestor, Thomas Witten, who was the first white man to settle in Tazewell County with his family.

Richmond Chapter, M.C.V. Alumni.

Dr. Robert V. Terrell was on March 31 elected president of the Richmond Chapter of the Medical College of Virginia Alumni Association. This was a re-organization meeting as it is the first meeting of the local chapter since March 31, 1941. Other officers elected are Dr. Richard Michaux as vice-president and Wilhelm Haag as secretary-treasurer.

Dr. L. J. Motyca,

Of Norfolk, for the past twenty-two years surgical pathologist at Norfolk General Hospital (except for the time he was in service), has resigned that position to accept an appointment to the staff of Rockingham Memorial Hospital at Harrisonburg. He will enter upon his new duties on June 1.

"Buddy Poppy" Sale.

Attention is called to the Buddy Poppy Sale to be held in May, all Buddy Poppies being made by disabled ex-service men. It is particularly pertinent that this month marks the 25th anniversary of the national home for widows and orphans of veterans. Entire proceeds of the annual sale are devoted to one phase or another of the veterans' rehabilitation and welfare program.

Revised Edition of Motion Picture Reviews Now Available.

The Committee on Medical Motion Pictures of the American Medical Association has completed the second revised edition of the booklet entitled REVIEWS OF MEDICAL MOTION PICTURES. This booklet now contains 225 reviews of medical and health films reviewed in *The Journal A.M.A.* to January 1, 1950. Each film has been indexed according to subject matter. The purpose of these reviews is to provide a brief description and an evaluation of motion pictures which are available to the medical profession. Each film is reviewed by competent authorities and every effort has been made to publish frank, unbiased comments. Copies are available at a cost of 25 cents each from: Order Department, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

The U. S. Civil Service Commission

Announces it is accepting applications for Medical Officer positions and for Medical Officer (Specialist) positions. Full information may be obtained from The U. S. Civil Service Commission, Washington 25, D. C.

James H. Stone

Has been appointed as a Program Field Consultant in the Public Health Division of the American Heart Association. He will assist in organizing local heart associations and developing community cardiac programs.

Mr. Stone previously served as Director of Public Health Education, City Health Department, Richmond, Va., and for the past year was Instructor in Public Health at the Medical College of Virginia in Richmond. For several years, Mr. Stone was Chief Sanitarian of the Sanitation and Community Health Organization of the Alaska Territorial Health Department.

A native of Williamsburg, Mr. Stone obtained his Master of Public Health Degree at Yale University. He holds a B.S. Degree from the College of William and Mary, where he also served as an Instructor in Public Health.

Dr. Randal A. Boyer,

Who has for several years been associated with Dr. Fred M. Hodges and his staff in Richmond, has moved to Ardmore, Pa., and is now assistant professor of Radiology at Hahnemann Medical College and Hospital, Philadelphia.

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It is a tragic irony that all doctors cannot immediately know all the new drugs, all the new discoveries. It takes time for information to fan out from a research laboratory, through doctors and to patients, and people die because of the gap between theory and practice. But it is happening less and less often. New detection methods, new treatments for cancer are now reaching general practitioners throughout the country with a speed that would have been considered magic a few years ago.

Seminars and refresher courses conducted by the American Cancer Society are heavily attended. A constant stream of brochures, journals and exhibits for medical gatherings are put out by the Society to keep 116,000 general practitioners up to date. And these are the doctors who are most likely to see the man or woman with an unsuspected cancer in time for treatment that can save them. These are the doctors for whom closing the gap between advanced knowledge and actual practice with patients means really giving the benefits of medical science to the people. These are the doctors who have made the

first fifty years of our century the healthiest in human history. Help them keep on learning the newest and best ways to diagnose and treat cancer.

Help them to keep on helping you, by giving to the American Cancer Society's 1950 Crusade Against Cancer—Give for cancer research, service to cancer patients and education about cancer.

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OBITUARIES

Dr. E. E. Epperson,

Prominent rural physician of Meadowview, died at the George Ben Johnston Memorial Hospital on April 1, 1950, due to burns received when his pajamas and bathrobe suddenly ignited when sitting near an open fire on Tuesday morning, March 28. He was 71 years of age at the time of his death.

Dr. Epperson was a graduate of the University College of Medicine in 1905 and served his internship at the Home for Incurables. He practiced medicine in Washington County for 45 years, the first 8 years in Abingdon, and the remainder of the time in Meadowview.

Dr. Epperson was born in Campbell County, Virginia on May 26, 1878. He was buried in the Knoll Kreg cemetery, Abingdon, Virginia. Dr. Epperson is survived by his widow, Mrs. Bertha Rowe Epperson and four sons and four daughters.

Dr. Epperson was a charter member of the Washington County Medical Society when it was reorganized in 1949.

At the suggestion of the president and the consent of several members of the Washington County Medical Society the following resolution was passed on April 2:

BE IT RESOLVED that the members of the Washington County Medical Society express their sincere sympathy to Dr. Epperson's family in their grief. In the death of Dr. Epperson these people of Meadowview have sustained a deep loss. He was a tireless worker and worked unceasingly for the health and care of his patients and professional colleagues. The community has lost a valued and beloved citizen and the medical profession a physician who will be greatly missed and difficult to replace.

This resolution to be spread on the minutes of the Medical Society, a copy sent to the VIRGINIA MEDICAL MONTHLY, and a copy to the family of Dr. Epperson.

Committee:

J. A. WOLFE
G. H. WOLFE
J. M. SUTER

Dr. Charles Carr Richards,

One of the older physicians of Roanoke, died on March the 12th, at the age of 70 years. He studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1906. He was a member of the Roanoke Academy of Medicine, and had been a member of the Medical Society of Virginia for a number of years. His wife and a daughter survive him.

Dr. John Walker,

For many years a practicing physician of Lynchburg, died March 27, at the age of 83. He was a graduate of the University of Maryland in 1891, took graduate work at Johns Hopkins University, and attended numerous clinics and post-graduate courses. He was a member of the Lynchburg Academy of Medicine until his retirement from practice more than ten years ago, and was made a Life Member of the Medical Society of Virginia in 1948. His wife and a sister survive him.

Dr. David Meade Mann,

Formerly of Richmond, died at the home of his daughter in Bloomington, Indiana, March 21. He was for many years a widely known and beloved physician of Richmond, prior to his retirement about ten years ago when he moved to Paducah, Kentucky, where his daughter was then living. He was 76 years of age and a graduate of the Medical College of Virginia in the class of 1895. He was a former member and secretary of the Richmond Academy of Medicine and formerly a member of the Medical Society of Virginia.

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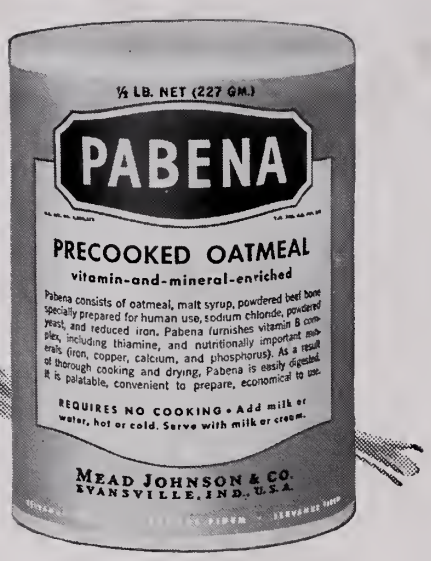

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CHARLES LOUIS ALPHONSE LAVERAN ISSUE

June, 1950

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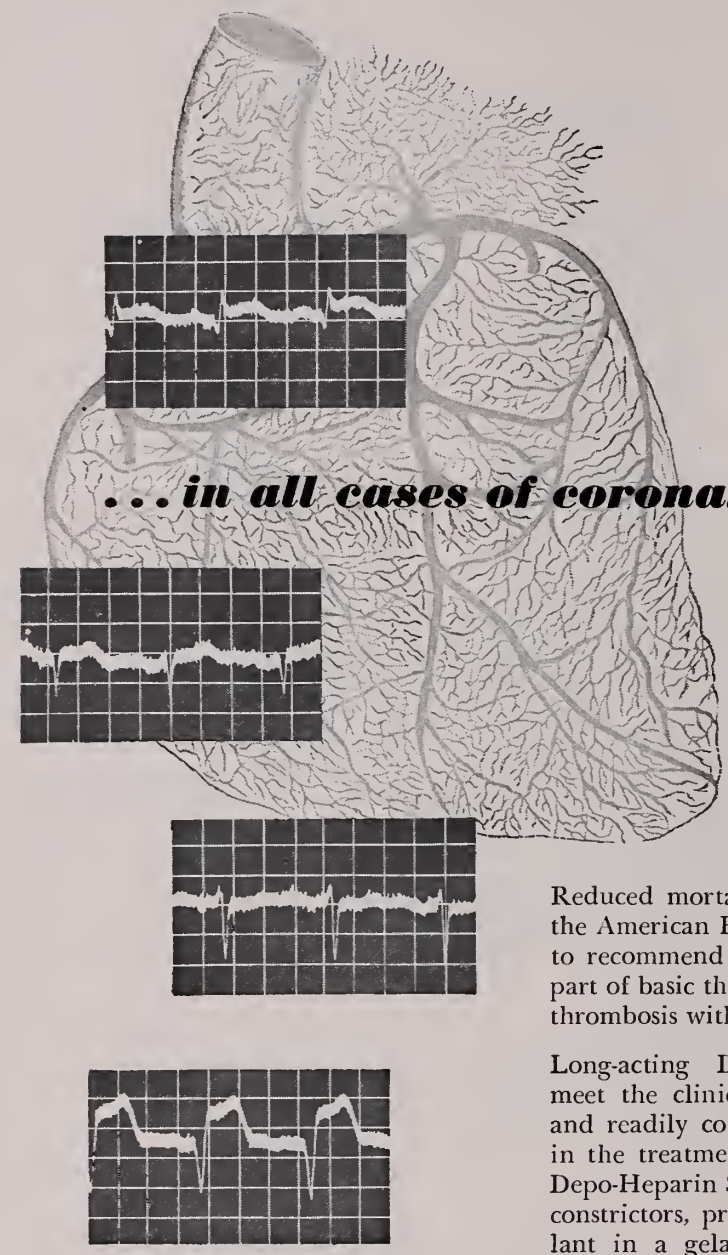

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1. Wright, et al: Am. Heart J. 36, 801 (Dec.) 1948.

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GUEST EDITORIAL

A Multi-phasic Screening Survey at Richmond

THE interest of the public in individual "health" examinations at its own expense has been sluggish in years gone by, although it apparently has increased in the past 20 years. We doctors may have failed to stimulate such interest partly because we, ourselves, are interested primarily in the cure of the sick and the alleviation of suffering. The interest of the public in such examinations at the expense of other people seemingly is much greater, although it seems likely that all such examinations are at the expense of the public indirectly either in higher taxes, if made through the public health agencies, or in the higher cost of goods and services if offered by private agencies, foundations or doctors. The pediatricians have persuaded the public, as have the dentists, that routine examination at regular intervals is worthwhile, but not many adults make such appointments with their family doctors for such service, although such is done at times. Life insurance companies do offer such a service to some of their patrons, and the Life Extension Examiners make such examinations on a large group of the insured population. The latter company has been paid by various life insurance companies, and the financial benefits in prolonged health and life about cover the cost of the examinations.

The tuberculosis agencies have developed general mass survey techniques for the detection of tuberculosis in the general population and the diabetic societies have carried on similar projects. The combining of these various efforts has interested many people, and it would seem that the time, cost and trouble would not be much greater in running a number of tests on people presenting themselves for such routine examinations. If too much is planned and attempted, it would probably be as time consuming and expensive as having the examination made by the family doctor and probably less effective in detecting and caring for the sick.

Furthermore, one needs to consider whether or not one is helping to conserve the health of the people. Granting that unknown cases of diabetes, heart disease, tuberculosis, etc., are found we still must consider the possible delay in the diagnosis of disease not detected. If a person is told by the clinic that they find no evidence of disease, he may ignore for many months symptoms which otherwise would have driven him to seek the services of his doctor. A patient may wait months for her turn at the Richmond cancer detection clinic before they tell her she has no evidence of cancer but that she should see her doctor for diabetes, thus substituting an expensive diagnostic work-up for a simple urinalysis and much earlier diagnosis.

About six months ago representatives of various organizations especially interested in the health of the people of Richmond and its visitors were called together. The Richmond Academy of Medicine, the Richmond Heart Association, the Virginia Diabetes Association, The Richmond Public Health Department and many other groups

were represented. Dr. E. M. Holmes informed us that the federal government was interested in ascertaining facts about multi-phasic screening by which a large block of the ambulatory population would be tested quickly and simply for several chronic diseases, rather than by one test such as chest x-ray or a blood test for syphilis or a urinalysis, all of which has been done many times in the past.

This study was to be an investigative project in the true meaning of the word. Only two cities would be used, one as a check against the other. The federal government would supply the funds which we could supplement by equipment and personnel and possibly a small amount of money if desired. After due consideration this group decided to accept the offer and to formulate a program.

The final decision as to the tests and the details of conduction of the survey was made after receiving recommendations from various committees of people qualified in their fields of endeavor. A blank was drawn up and subsequently modified as seemed indicated. The procedure recommended was designed to have a receiving clerk to aid each patient in filling out necessary data such as name, age, occupation, and his doctor's name and address to whom the report was to be sent. The examination was to include a questionnaire about allergies now and in the past, height, weight, blood pressure, chest x-ray, blood tests for sugar, hemoglobin and syphilis and on some patients, an electrocardiogram. Intra-ocular tension and vision were considered and omitted, only to be accepted later. As the person left the end of the line, he was given a container for mailing in the urine and directions for its collection two and one-half hours postprandially. He was told to get in touch with his doctor but that no report could be given until the urine was received.

The whole plan and its execution seemed simple, worthwhile and harmless. The doctors of the community were responsible for this investigative project. No one knew whether it would indicate the value of different organizations conducting their own individual screening studies as practiced by the tuberculous and diabetic groups or whether they should combine and check each applicant for the various diseases at one time. Such an extensive examination might yield very little more than a urinalysis and a simple statement as to general health. We all looked forward to the completion of the screening and the analysis of the results. That one must beware of federal "Greeks bearing gifts" was emphasized by the institution of other such multi-phasic surveys not only before this one was studied but even before it was completed and a long-range follow-up study on this has already been requested. Thus we must determine not only the medical significance of mass surveys, but also the political implications with respect to socialism if federal funds are used.

However, the survey in Richmond seems to be well run due chiefly to the work of the Richmond doctors and the Richmond Department of Health under the able direction of Dr. Holmes. It should yield much interesting data which I dare say will be helpful from the standpoint of disease incidence in the ambulatory population as well as from the point of view of how to conduct surveys in the future and it may increase the desire of the public to have annual health examinations by the family doctors. At any rate, an annual screening test under the auspices of the government does not seem indicated.

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SIR WILLIAM OSLER—MEMORIES*

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Dr. Marvin Pierce Rucker, your President, is one of the oldest living students of Osler, and the basis for inviting me is that I am the youngest living student of Sir William. I know that I express the regret of all of us that Dr. Rucker is ill. In preparing this talk I took advantage of the fact that July 12, 1949, was the centenary of Osler's birth. Within the last six months five medical journals have published special issues devoted to him, and many articles have been written about him. I have read four hundred and forty of these and previous articles. In a way I am sorry I have done so, because my own reminiscences of my student days have been merged with my recollection of what I have read.

From my reading I gained three impressions. One is that no one who wrote about Osler can do so without going into rhapsodies. To those of us who worked with him these praising statements are rather understatements, but to the younger generation they are cloying. As a result, most students and young physicians today have no conception of Osler as a human being, and no idea of the devotion which he inspired in his students. My second impression from reading these tributes to Osler is that none of his students would brook any criticism of him. We regarded him as perfect. The third lesson I learned is that many of Osler's admirers felt that his influence was due to what he was rather than what he did. In all of these articles I have read there were very few details of his actual accomplishments.

So tonight I felt that I might review some of the arguments I had with my former chief, Dr. John Howland. When I returned from the first war I was an assistant to Dr. Howland, who was one of the white-coated laboratory physicians, and who looked on Osler as a representative of the frock-coated bedside generation. To irritate me he would say: "What did Osler do to be regarded as a great man?" As a result, I learned to marshal Osler's accomplishments. There are at least seven ways in which he was outstanding.

First, as a physician; Osler's ambition, as he wrote several times, was to make of himself a good clinical physician. Certainly he succeeded. As a diagnostician he has never been surpassed. As a therapist, it has been said that he was a nihilist, but he was a nihilist only in the sense that he did not use drugs unless there was definite proof of their efficacy.

The second pillar of Osler's fame was as a teacher. Under him the student for the first time was taught to work with the staff rather than listen to lectures. He also started the residency program in order to give young men an opportunity for training beyond the internship. However, as early as 1892 he pointed out the dangers of specialization. I am sure he would have felt that his training program had boomeranged if he knew that there are now 17,293 residencies in the United States and Canada. We must do what Osler did in his time—emphasize general practice to medical students because they cannot be legislated into that field, in which they are so greatly needed, as was pointed out in Dr. Rucker's paper.

Osler's third contribution is practically forgotten. He is remembered as a bedside physician, but it is not generally recognized that he was the first clinician who did laboratory work. He introduced laboratory methods into McGill in 1875 and taught clinical pathology at the University of Pennsylvania from 1885 to 1889. During his sixteen years at the Hopkins, he transformed and greatly enlarged the application of laboratory methods to medicine, and at Oxford he fostered research in physiology and pathology.

Fourth, Osler transformed medical education, and was an early advocate of medical licensure. He also did much to elevate the medical profession itself, through the American Medical Association and in the organization of medical societies such as the Association of American Physicians and the American Pediatric Society. It is often forgotten that Osler was as much of a pioneer in pediatrics as Jacobi.

From the Department of Pediatrics, Duke University School of Medicine and Duke Hospital, Durham, N. C., based on memories of student days at Oxford, 1913 to 1916.

*Presented by invitation at the meeting of the Medical Society of Virginia, at Fort Monroe, Va., October 10, 1949.

He also laid the foundations of social service work and of the campaign against tuberculosis.

The fifth basis for Osler's fame is his concise and accurate observation, as recorded in his writings. His bibliography has over fifteen hundred items. It is amazing that one man could have written so much. He is best known for his description of the five Osler's diseases. I never heard him speak of them as such, but they are so known. In addition, his textbook on medicine became the standard throughout the world, and went through sixteen editions and eighty-four printings. Each succeeding edition illustrated the progress of medicine. The tragedy of the last edition is that Osler's name was left off the cover.

The next pillar is Osler as a historian. Each week at Oxford he would invite a group of us to his home and after dinner bring out some da Vinci or other books and talk about the authors. He gave us memories we shall never forget. In fact, some believe that his fame will rest more on his humanism instead of his medicine.

Last, but not least, was Osler's personal influence. His wonderful power made every young man he met feel that he was in the presence of one who was taking a personal interest in him. He made and held friends everywhere.

Lastly, it is impossible to overrate what Lady Osler did to stimulate the great physician. She was an American, from Boston, a descendant of the Reveres, and a stately hostess of unruffled geniality.

Osler's place in our memory is very secure; but it is up to us who knew him to present him to the younger generation not as a deified individual without any faults but as a human being who did so much for medicine. I do not believe anybody can replace him; and we must remember him not only for what he was to us but also for what he did. He embodied, applied and transmitted all that is finest and best in a physician.

Bibliotheca Obstetrica

JENTY, CHARLES NICHOLAS

DEMONSTRATIO uteri praegnantis mulieris cum foetu ad partum maturi in Tabulis sex . . . . translata a D. Casimiro Christophoro Schmidel in aes incisa et recusa a Johanne Michaele Seligmanno . . . 1761-1765.

Mezzotint engr. 64 cm. (Drawings for the mezzotints by Riemsdijk, text in Latin and German.)

Jenty came originally from France, and worked at Anatomy in London. He published a course of lectures on the human structure and animal economy (London 1757).

THE TREATMENT OF ACUTE LEUKEMIA WITH THE FOLIC ACID ANTAGONIST, AMINOPTERIN*

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It is the purpose of this paper to discuss briefly the development and use of the folic acid antagonist, aminopterin, in the treatment of acute leukemia and to present seven cases in which it was used, five of which were treated at the Medical College of Virginia Hospital in Richmond, Virginia.

Shortly after pteroylglutamic acid (folic acid) made its appearance as a potent hemopoetic stimulant, certain carcinolytic powers of this drug in animals were demonstrated. Later, however, it was shown by Lewisohn that this power was not due to folic acid but to the folic acid conjugate, the so-called fermentation casei factor. This was later synthesized by the late Dr. Subbarow and shown to be pteroyltriglutamic acid, later named diopterin. The effects of this substance on incurable cancer in man were studied by Farber *et al.*, and among those cases treated were 11 children with acute leukemia. They observed what they called an "accelerated phenomenon" in the viscera and bone marrow of these children. This observation together with Farber's findings that a folic acid free diet protected against and enhanced the growth of certain cancers in rats suggested to him the possible advantages in the use of folic acid inhibitors or antagonists in the treatment of acute leukemia. This conclusion concurred with that of Wall and Little from their work on birds. Farber found, as did his contemporary, Meyer, using pteroylaspartic acid (an-fol A or R), one of the first folic acid antagonists, that although the initial case died without clinical evidence of response, postmortem studies showed a markedly hypoplastic bone marrow representing a greater magnitude than he had ever seen before. This was followed by a series of 14 children treated with the antagonist pteroylaspartic acid and 7 children treated with the antagonist methylpteroic acid. Sufficient encouragement was obtained from these to continue studies on more powerful antagonists to folic acid in the treatment of acute leukemia in children.

In November, 1947, the most powerful antagonist to folic acid, 4-aminopteroylglutamic acid (aminopterin) became available to Dr. Farber for his use in this work. At this time a series of 16 children were treated with the drug and of these 10 responded favorably. He found that it had marked effect on the leukemic bone marrow and caused a recession of the liver, spleen, and lymph nodes when they were enlarged. The white blood cells tended to return to normal regardless of whether there was a leukopenia or a leukocytosis. Also there was improvement, approaching normal of the red cell count, hemoglobin and platelets.

Farber distinctly warns that this drug is not without toxicity. The most important manifestations are stomatitis, ulceration of the mucous membrane of the mouth, smooth tongue, pharyngitis, atrophic changes in the intestinal epithelium, diarrhea, gastrointestinal hemorrhage, particularly when there is diffuse leukemic infiltration of the bowel, and depletion of the bone marrow leading to aplasia. Upon the appearance of any of these symptoms the drug should be temporarily discontinued.

He also warns against over-optimism about this treatment. He points out that the remissions are only temporary and that there is no evidence of a "cure" in these children. However, these are the most promising results in the treatment of leukemia so far reported, and further research may lead to a more satisfactory method of treatment.

In our small series of cases of acute leukemia treated with aminopterin, we have attempted to follow as closely as possible the dosage and treatment schedule recommended by Dr. Farber and feel that these cases substantiate many of his findings.

Case 1: Z. J., a 4 yr. old colored female, was admitted to Dooley Hospital on May 12, 1948, with a chief complaint of sore leg and arm of 4 days duration. There was a history of listlessness, loss of ap-

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, Va., October 9-12, 1949.

petite, and weight loss over a period of 2 months. Four days prior to admission the child complained of pain in the left wrist and forearm with some swelling and elevation of temperature, and the day prior to admission she complained of pain and hotness of the right ankle.

Physical examination on admission was negative except for numerous large anterior cervical nodes, enlarged and cryptic tonsils which were not inflamed, and a rough 1st sound with a questionable 3rd sound at the apex of the heart. The right ankle was swollen, warm and tender on palpation or motion. The impression at this time was acute rheumatic fever. All laboratory studies were within normal limits with the exception of the R.B.C. of 2.53 million; hgb. of 8.25 gm.; W.B.C. of 6,150, with a smear within normal limits; and a sedimentation rate of 33 mm. hr. Marrow studies were not done at this time.

The patient responded fairly well to symptomatic therapy for three weeks; however, at this time she appeared ill with fever, pain and heat of the right arm and leg, and a generalized lymphadenopathy with the nodes discrete and non-tender. The W.B.C at this time was 18,500 with 85% lymphocytes. The smear was checked by the hematologist and reported to be indicative of acute lymphatic leukemia, which was confirmed by sternal marrow and lymph node studies.

During the following week the spleen became palpable, W.B.C. dropped to 5,300, and the hgb. to 3.31 gm. The patient was given a whole blood transfusion and discharged on June 10, 1948.

She was re-admitted on August 10, 1948, with the history that in the interim she had progressive fatigue, apathy and anorexia accompanied by fever, painful swollen joints and edema of the face and extremities. Physical examination at this time showed puffiness of the eyelids and cheeks, generalized lymphadenopathy, liver 4 finger-breadths below the costal margin and tender, but the spleen not palpable. The right knee was swollen, hot and resistant to movement. The blood picture at this time showed R.B.C. of 2.38 million; hgb. of 7.3 gm.; W.B.C. of 14,450 with 13% neutrophils, 79% lymphocytes and prolymphocytes, 8% lymphoblasts and an occasional normoblast. Several whole blood transfusions were given and one week later the W.B.C. was 3,500 with 13% neutrophils, 24% lymphocytes, 1% monocytes, 62% lymphoblasts, and 2% normoblasts. The bone marrow showed a marked reduction in the total number of cells, most of which remained being lymphoblasts. The patient's course was downhill with anemia, lymphadenopathy, weight loss and listlessness.

At this time aminopterin was made available, and on September 19, 1948, the patient was started on daily intramuscular injections of 1 mgm. of the drug. The following day a stomatitis was noted, and, during the next week this and the patient's general condition became progressively worse. At this time it was noted that the liver was 6 cm. below the costal margin, the spleen 5 cm. below the costal margin, and there was bleeding from the mouth and rectum. Although the stomatitis and bleeding are recognized as toxic signs of the drug, it was continued due to the terminal condition of the patient, and crude liver and folic acid were given for one week. Following this the patient showed steady improvement with a gradual disappearance of the stomatitis, and one week later the W.B.C. was 850, with 42% neutrophils, 57% lymphocytes, 1% lymphoblasts. On October 10, 1948, the blood showed R.B.C. of 3.21 million; hgb. of 8.8 gm.; W.B.C. of 1,800, with 72% neutrophils, 27% lymphocytes, and 1% monocytes, all cells being mature.

The patient showed steady improvement with recession of the liver, spleen and lymph nodes. She had the appearance of a healthy 4 year old colored female.

In November, 1948, she showed swelling and tenderness of both knees and x-rays showed bone destruction. She was treated as a case of osteomyelitis; however, later it was decided that this was due to leukemia infiltration and she has remained in the hospital, to date being treated for this.

She still gets aminopterin in daily 1 mgm. doses, but this has had to be discontinued on two occasions for intervals of 6-7 days due to mild stomatitis.

Case 2: A. H., a 6 months old colored female, was admitted to Dooley Hospital on November 17, 1948, because of exophthalmos and diarrhea. The child had had a greenish diarrhea for two months which had become black 1 month prior to admission. Occasionally blood streaks had been noted. She was treated for bronchopneumonia 1 week prior to admission, and 3 days prior to admission the mother

noted protruding eyes and swelling along the zygomatic bone.

Physical examination revealed a well developed and nourished 6 months old colored female with Cheyne-Stokes respiration. There was prominence of the zygomatic arch bilaterally extending back to the ears with soft tissue swelling anteriorly and lateral to the eyes. There appeared to be a bony enlargement of the right zygomatic arch. There was bilateral exophthalmos, more marked on the left, and tension was increased. There was slight swelling of the eyelids. The gums were thickened and of a bluish color. The axillary and cervical nodes were enlarged bilaterally, but the liver and spleen were not palpable. The blood showed R.B.C. of 2.24 million; hgb. of 5 gm.; and W.B.C. of 500,000 with many immature W.B.C. apparently of the myeloid series. The hematologist reported the smear to show marked leukocytosis with frequent monocytes, a few myeloblasts, promyelocytes and myelocytes. There was a definite tendency toward sickling on the smear with a few normoblasts present, and sickling was strongly positive in less than one hour. Marrow studies showed a definite monocytic leukemia.

The patient was given supportive therapy, several whole blood transfusions and the eyes were treated with x-ray. On November 24, 1948, aminopterin was started intramuscularly at ½ mgm. daily and on November 30, 1948, it was raised to 1 mgm. daily. The W.B.C. on November 29 was 150,000, and on December 1, was 50,000 with 20% neutrophils, 17% lymphocytes and the remainder monocytes and disentegrated cells.

The patient improved rapidly, the exohpthalmos regressed and her breathing became normal. The spleen had become palpable on November 25, 1948, but recessed rapidly after that. The patient refused to eat, however, and tube feedings had to be used.

In spite of the improvement the patient suddenly and unexpectedly expired on December 3, 1948, and the cause was not shown at postmortem.

Case 3: P. M., a three year old white male child, was admitted to the Medical College of Virginia Hospital on April 15, 1949, because of difficult breathing and cyanosis. For two years he had frequent upper respiratory infections, loose cough and drenching sweats and for six months had had anorexia. For three weeks he had chest pain after walking and one week prior to admission he developed paroxysms of crying and coughing of about 15 minutes duration twice a night. Some rattling breathing and gasping respirations occurred with the crying spells. For three days the child had been lethargic and had eaten no solid food, and he had been in a croup tent because the spells were becoming more frequent and of longer duration. He had chest pain with coughing.

Physical examination on admission revealed a well developed but poorly nourished white male child in acute inspiratory distress with a temperature of 100.2. There was minimal injection of the tonsils and anterior pillars. Chest examination revealed inspiratory difficulty with lower intercostal and substernal retraction on inspiration. There was dullness to percussion anteriorly to the left from the 1st to the 3rd rib to the axilla, blending with the cardiac dullness. Breath sounds were transmitted over the area of dullness. The lymphatics revealed ½ cm. occipital nodes and small discrete soft posterior cervical nodes; 1 cm. left axillary nodes; 1 cm. fusiform non-tender femoral and inguinal nodes. The blood picture on admission showed R.B.C. of 4.42 million; hgb. of 12.8 gm; and W.B.C. 12,800 with 35% neutrophils, 44% lymphocytes, 16% eosinophils, 2% basophils, and 5% monocytes. X-ray of the chest showed a tremendous mediastinal widening with an encroachment upon the trachea filling the anterior mediastinum, and lymphoma was suggested.

The patient was given supportive therapy and x-ray therapy to the tumor mass for 10 days, a total of 1,550 r being given. X-ray on April 25, 1949, showed only slight widening of the mediastinum with the lung fields clear.

Following x-ray therapy rapid swelling of the cervical lymph nodes was noted. The blood picture at this time showed R.B.C. of 3.68 million; hgb. of 10.6 gm.; and W.B.C. of 4,300 with 47% neutrophils, 43% lymphocytes, 5% eosinophils, 1% basophils, and 4% monocytes. A marrow study showed definite myelogenous leukemia. On May 2, 1949, the patient was put on ½ mgm. of aminopterin and raised to 1 mgm. daily the following day. This was maintained until his death.

In spite of the aminopterin and supportive care the patient went rapidly downhill and ceased on May 8, 1949. The blood picture the day of death showed R.B.C. of 2.25 million; hgb. of 5.4 gm.; W.B.C. of 7,300 with 1% neutrophils, 905 lym-

phocytes, 1% eosinophils, 2% promyelocytes, 5% blasts and 1% myelocytes.

Case 4: B. H. U., an eight year old white male was admitted to the Medical College of Virginia Hospital, July 19, 1949. There is a history of a two year period of chronic otitis media treated intermittently with penicillin. At appearance of the infection with drainage of the right ear the previous week he was treated by penicillin and when the fever failed to respond and anemia was found, his doctor referred him to the hospital.

Physical examination revealed an ill appearing, listless white male, hearing lost, drainage of the right ear, foul smelling grayish white pus, bilateral mastoid tenderness, marked proptosis of both eyes, more particularly in the right, with periorbital edema. Both discs appeared fuzzy, and could not be well seen. Other essential physical findings were shotty small nodes in the cervical axillary and inguinal regions. The spleen was palpated 4 cm. below the costal margin.

Blood examination revealed 1,720,000 red cells, a marked reduction in platelets; 8,250 white cells, with 48 immature blast cells and 52 small lymphocytes. Sternal puncture showed many promyelocytes and blast cells showing Auer bodies. There were also a number of hemocytoblasts. The red series was markedly reduced.

Clinical Course: Aminopterin 1 mg. intramuscularly daily was started on August 1st. During the hospital course six transfusions were given and when there was no appreciable response to the aminopterin, this was raised to 2 mg. on August 13th, and to 3 mg. on August 29th. There were no appreciable reactions to the aminopterin other than a slight bleeding from the lips and at one time a membrane over the tonsil. There was no improvement in the white count, this ranging between six and fourteen thousand with 12% polys on one date, being the highest in this series, and the final count continuing to show about 50% blast cells. He was discharged at his parents' request September 2nd and died September 6th, at which time autopsy was granted. The clinical impression was acute myelogenous leukemia (chloroma).

Autopsy revealed multiple tumors involving the skull, sinuses and extra ocular tissue, extending into the subperiostium of the bones. These tumors were also seen along the vertebral column, extending well down into the pelvis, and all had a greenish tinge. The spleen and nodes about it were enlarged and there were nodules in the stomach mucosa. The anatomical diagnosis was chloroma.

Case 5: I. M. B., age four years, ten months. This white female was seen by one of us (J. H. S.) May 3rd, 1949, through the courtesy of Doctor Stanley Meade of Richmond, Virginia. The child had been well until ten days ago when she developed an unexplained fever of 102 degrees associated with listlessness and a mild upper respiratory infection. Aureomycin was given with no appreciable improvement in the temperature.

Physical examination revealed a well developed and nourished listless child with marked pallor. Tiny nodes were palpable in the cervical, axillary and inguinal regions. There were two small 4 mm. ecchymoses in the left buccal region. The spleen was firm and palpable six centimeters below the costal margin. Otherwise, the physical examination was essentially negative.

Laboratory Data: R.B.C. 1,500,000; hemoglobin 30%; W.B.C. 25,000, the smear showing most of these to be young blast cells. Very few platelets were to be found. The diagnosis of acute myelogenous leukemia was made. The family sought further consultation and the child was sent to the Children's Medical Center at Boston. There the diagnosis of acute "blast" leukemia was confirmed, the bone marrow puncture being reported as: "A very cellular marrow, made up of similar appearing large homogeneously stained young blast cells with occasional nuclei and frequent vacuoles. There is very little cytoplasm and the cells are quite young, making identification difficult."

Following two blood transfusions of 250 cc. the child was placed on aminopterin, 1 mg. intramuscularly daily on May 4th, 1949. During the next five days she became afebrile and the white count dropped 1,700 and, finally, on May 14th, to 950 white cells when the dose of aminopterin was reduced to .8 mgs. A blood transfusion of 300 cc. was given May 18th when the hemoglobin had dropped to 8.2 grams. She was returned to Richmond, June 1st where examination revealed a red count of 3,960,000 with 75% hemoglobin and 4,600 white cells, the smear appearing essentially normal except for the presence of a rare promyelocyte. The child retained a red count of about 4,000,000 with a white

count of 5,000 to 7,000 and an essentially normal differential with normal platelets. Her clinical picture appeared to be excellent throughout the months of June and July. Over this period the aminopterin was given by mouth, a one milligram ampule being dissolved in five teaspoons of orange juice and one teaspoonful discarded to give a dosage of .8 milligrams. Occasionally small sores developed in the mouth but these disappeared with continued treatment of vitamin B complex. During the latter part of July occasional blast cells were noted in the smear, but the red count ranged around four and a half million with a normal white count and differential. Although the clinical condition appeared excellent, the child's nurse felt that during the month of August the child was going down in her general health. Toward the latter part of August during weekly blood examinations, there would be times when at least 50% of the white count was made up of blast cells, or, again, only scattered blast cells would be seen. During September the blast cells ranged from 10 to 15% of the total white count. This is the situation at present.

Case 6: B. J. H. a six year old white female was admitted to the Medical College of Virginia Hospital April 26, 1949, with the complaint of swelling under the jaws of a week's duration, followed by swelling of eyes and anorexia. Pediatric consultation was sought in Lynchburg where a diagnosis of acute leukemia was made and the child referred to Richmond.

Physical examination revealed multiple firm, nontender nodes, pecan size, in the submaxillary region on the right side along with cervical supraclavicular axillary and inguinal palpable nodes, pea to acorn size. The liver was two and a half centimeters below the costal margin and the skin was palpable four centimeters below the costal margin. There was a puffiness of the eyelids and pinpoint, purpuric spots were noted over the abdomen. The child was listless and obviously ill.

Laboratory Data: R.B.C. 2,650,000; W.B.C. 361,000 with 1% PMN, 1% PMB, 33% small lymphocytes and 65% blast cells, thought to be lymphoblasts. Platelet count 122,000; normal, 500,000. The diagnosis of acute leukemia, probably lymphoblastic, was confirmed and a transfusion of red cell suspension from five hundred cc. of blood was given on the day of admission.

Subsequent Course: Aminopterin, 1 milligram intramuscularly, was started April 27th, and continued daily until her discharge May 4th. A further transfusion of 500 cc. of whole blood had been given on May 2nd and discharge to her family physician outside of Richmond was agreed to at the request of the family. At this time her red count was 4,720,000 with 133,000 W.B.C. lymphoblasts and prolymphocytes making up 64% of the count. Whether or not she was responding adequately was questionable and it was decided to continue at home injections of aminopterin daily.

Gastro-intestinal hemorrhages and stomatitis prevented continued use of aminopterin and it was used only periodically until the child was brought back to Richmond May 20th at which time the red count was 1,880,000 with 35% hemoglobin, and 5,800 white cells, the smear showing no abnormal cells. She was given a transfusion and returned home that day.

Report from the hospital June 15th showed 4,480,000 red cells, 36,000 white cells and the differential as reported showing no abnormality. Blood smear was requested and it was advised that the dose of aminopterin, because of continued difficulty with stomatitis, be reduced to .8 milligrams by mouth, the one milligram ampule being dissolved in 5 teaspoons of orange juice and water, with one teaspoonful being discarded. On August 5th blood smears and the blood count were sent to us, at which time there were 2,400,000 white cells with 40,000 leukocytes, approximately 50% of the high white count being what now appeared to be myeloblasts, the patient now appearing to be in definite relapse. A transfusion was given at the local hospital and August 12th the blood count was reported as 3,600,000 red cells with 30,000 leukocytes, 58% myeloblasts, 15% PMN, 12% "transitional", 10% lymphocytes (small), 5% lymphocytes (large). At this time the patient began to hemorrhage from the bowel and this continued for ten days with the patient unable to eat, taking only juices which she would expel most of the time. Another transfusion was given at home but she continued to have pain in the abdomen, chiefly about the navel, the aminopterin being discontinued during this period. The child died September 28th.

Case 7: M. B., a six year old, white female was seen by one of us (J. H. S.) through the courtesy

of Doctor Stanley Meade of Richmond, Virginia, with the complaint of anemia, lymphadenopathy involving both sides of the neck, particularly the right, and difficulty in breathing. She had been sent home from a visit in another state with the possible diagnosis of infectious mononucleosis.

Physical examination revealed multiple nodes as large as an acorn in the right side of the neck and to a lesser degree in the left side. The spleen was palpable. An x-ray of the chest revealed a medial sternal mass while a blood transfusion had been given three days previously.

Laboratory work showed a red blood count of 2,570,000, 58.4% hemoglobin, 2,600 W.B.C. with 77 "lymphocytes", 18 PMN, 3 MN, 2 PME. The platelet count was 23,000. Study of the blood smear revealed a large number of immature blast type cells with a rare promyelocyte, a greatly increased platelet count and a red cell picture showing active regeneration with a number of large young red cells. A diagnosis of acute leukemia, probably lymphoblastic, was made from the smear. Biopsy of a cervical node was classed by the pathologist as lymphosarcoma and as this diagnosis had been suggested by the reticular appearance of the young blast cells in the peripheral smear, a final diagnosis of leukosarcoma was made and the child placed on aminopterin, milligrams 1, by injection daily.

After two transfusions, the child was sent home and continued on injections of aminopterin over a period of the next two months. There were frequent interruptions of treatment because of stomatitis and gastro-intestinal hemorrhage, the child being returned to the hospital for blood transfusions on two occasions during this period. The red count continued in the range of 3,200,000 to 4,000,000 and only once did the white count reach the total of 5,000 when on February 21st the smear was noted to be essentially normal, there being no immature cells. The platelets never rose to above 50,000 and with the exception of a short period of about a week the latter part of February, abnormal cells were always noted in variable numbers. Although aminopterin was continued, on March 25th the red count was 1,710,000 with 33% hemoglobin and the white count was only 350, the low count making it difficult to distinguish immature cells. The child died the following day. Autopsy was not performed. The drug was considered totally ineffective in this case with the possible exception of about one week in the middle of the course.

In summary, a brief history of the development and use of the folic acid antagonist, aminopterin has been given, and seven cases in which it was used have been abstracted. Of these cases, one was a leukosarcoma; one was an acute monocytic leukemia; two were acute lymphatic leukemia; and three were acute myelogenous leukemia. Three of these cases showed no response to the drug but the other four showed definite response. Of these four cases, one is still living 3 months after the diagnosis was established and one is still living 18 months after the diagnosis was established.

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DISCUSSION

DR. JOHN E. STEVENS, Richmond: Any agent, such as aminopterin, that may produce a remission in acute leukemia, even though temporary, demands our interest.

Dr. McCall's excellent report of the results that he and Dr. Scherer obtained while utilizing this drug parallels those of Sidney Farber. Aminopterin and other folic acid antagonists were first used in acute leukemia in November 1947 at Farber's suggestion.

The use of aminopterin has not been confined to the acute lymphoblastic leukemias of children. Dameshek, Doan, Stickney and others have used it with varying results in adults. While the most prompt and lasting remissions have been obtained in lymphatic leukemia, the monocytic and lymphosarcomacell types have shown some response according to Doan. The myelogenous leukemias have not been affected by this drug.

Results seem to vary with different investigators. Doan states that we may probably expect nine months remission in cases of true acute lymphatic leukemia. In fact, Farber

has reported a patient held in remission for 23 months. Stickney and his associates at the Mayo Clinic are less enthusiastic regarding this drug. In a group of 33 adults and 21 children, only 8 complete remissions (15%) were obtained. Of these 8, four are now dead, and the longest remission lasted four months.

Several points regarding the use of aminopterin should be emphasized. The dosage should not exceed 2 mgm. daily. Oral administration appears to be as effective as the parenteral route. The toxic nature of this drug contraindicates its general use unless proper system of control is set up. Daily leucocyte counts and physical examination with frequent bone marrow studies should be made while attempting to produce a remission. An optimum remission is more accurately determined with bone marrow study by one experienced in hematology. When such a remission is induced, a maintenance dose of aminopterin may be given two or three times weekly depending on the individual needs. Toxic manifestations which one should be alert to detect are: neutropenia, alopecia, ulcerative stomatitis (often first noticed under the tongue), diarrhea, nausea, vomiting, fever, and gastro-intestinal hemorrhage. The appearance of any of these should be cause for temporary cessation of therapy.

In summary, aminopterin should be used cautiously and only in selected cases of acute leukemia. It should be considered not a cure, but rather a depressant of a leukemic process that invariably is fatal. As Dameshek so graphically described it, "Acute leukemia may be likened to 'wildlife' which, although damped by aminopterin, continues to 'smolder'. This smoldering may suddenly light up again into an active leukemic picture, unless maintenance therapy is given." While clinical response has been striking in many instances, our enthusiasm has been curbed by the marked toxic affects encountered. Our judgment of when we should use this agent should be tempered with these facts.

I want to thank Dr. McCall for the timely report on this subject and for the honor in being asked to discuss it with you.

New Eye Instrument May Help Prevent Blindness.

A new instrument which measures pressure within the eye may result in the prevention of much unnecessary blindness. Development of the instrument, called a tonometer, is reported in the April 29 Journal of the American Medical Association by a New York doctor and a research worker.

Dr. Conrad Berens and Charles P. Tolman, B.S., also of New York, point out that the instrument is for "screening" large numbers of persons rather than for diagnosing specific diseases.

The instrument was developed from the basic design of an older instrument used for diagnosing eye conditions. Intraocular pressure is measured when the instrument is applied to the eye. The working parts are mounted in a plastic holder. The instrument is slightly less than three inches long and three fourths of an inch in diameter.

"We believe that this instrument, placed in the hands of general practitioners, may prevent blindness through earlier discovery of hypertension within the eye and earlier reference of the patient to an ophthalmologist," the authors say.

Increase of pressure within the eye is an early symptom of glaucoma, a principal cause of blindness, and other eye diseases.

No Preventive of Gray Hair.

An agent which will prevent the graying of hair of human beings is as yet unknown, says a medical consultant in the March 25 *J.A.M.A.*

"Sometime ago it was suggested that both pantothenic acid and para-aminobenzoic acid might prove to be anticanitic [opposed to graying of hair] agents because they seemingly prevented the graying of hair in laboratory rats," he writes. "However, they have had no such effect on humans."

ANTETHORACIC STOMACH: SUBSTITUTION FOR ESOPHAGUS —CASE REPORT*

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Many methods have been devised to compensate for functional or anatomic absence of the esophagus or to substitute for it. Gastrostomy, for instance, may be employed as a compensatory measure but obviously has many drawbacks. Various types of ante-thoracic tubes have been employed as substitutes for the esophagus, but they, too, have presented many difficulties.

In recent years, developments in surgical technic, supportive treatment and anesthesia have made possible a trans-thoracic approach to the esophagus and stomach. This approach has permitted combined esophageal and gastric procedures in one stage and consequently radical resections of the esophagus with or without parts of the stomach may be done with primary anastomosis within the chest. As a result there is today much less frequent need to devise substitutes for the esophagus. Nevertheless, there will probably always be some patients in whom multiple stage operations may be necessary or desirable. It may be worth while, therefore, to present a method of substitution for the esophagus which appears to be unusual if not unique. The method was devised not by a previously planned approach but by the adaptation of circumstances that developed during the care and observation of a patient whose course will be described in some detail.

CASE REPORT

History No. 167999. Miss F. C., age 54 years, was admitted to the University of Virginia Hospital, May 1, 1941. She complained of marked difficulty in swallowing food. Trouble had first appeared four months before and had increased progressively. At the time of admission she could take only small amounts of soft solid foods and not even these except by washing them down with liquids. Regurgitation when attempting to swallow had been recently troublesome. She estimated that she had lost ten pounds or more in weight. No blood had been vomited or seen in her stools.

She had consulted her regular physician after two months of symptoms but derived little if any benefit from his treatment. He finally had referred her, April 25, 1941, as a private patient to the Roentgenologist of the University of Virginia Hospital. Because of the results of the roentgenologic examination her physician referred her for hospitalization.

Examination: Physically she was quite small in stature, 61½ inches, and extremely thin. She weighed 85 pounds though her usual weight had been 98 pounds and her maximum 105 pounds. Except for complete adentia no other positive physical findings were recorded.

Her gastro-intestinal examination by x-rays April 25, 1941, already referred to, revealed deformities involving both the esophagus and the stomach at the cardia. At a distance of about 2.5 cm. above the cardia the esophagus had a deeply pinched appearance and distal to this point there were polyp-like filling defects in the column of barium. Similar defects were present in the upper part of the stomach. A tumor, probably carcinoma, with marked obstruction was reported.

An esophagoscopic examination was made May 2, 1941, by Dr. F. D. Woodward. At the lower end of the esophagus, just above the diaphragm, a large mass was found protruding into the esophageal lumen. It bled easily and its appearance suggested a malignant tumor. Tissue removed from the mass was examined microscopically and revealed "epidermoid carcinoma of the esophagus, grade 2 to 3".

Laboratory Examinations: Routine laboratory studies revealed nothing abnormal except for evidences of secondary anemia, hemoglobin 64 per cent (10 grams), red blood cell count 2,380,000. Following the administration of three transfusions, 500 cc. each, of whole blood, the blood was restored to normal; hemoglobin 97 per cent (15 grams), red blood cell count 4,560,000.

The diagnosis, carcinoma of the esophagus with extension into the stomach and marked obstruction at the cardia of the stomach, led to the decision to

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explore the region surgically. It was thought that resection might be accomplished but if not, that a gastrostomy could be established as a palliative measure. Because subsequent events led to a series of operations they will be designated numerically.

Operation No. 1: May 12, 1941. Partial Gastrectomy and Esophagectomy; Gastrostomy, Anterior Abdominal, Left. Continuous spinal anesthesia with pontocain was employed and the abdomen was entered through an incision in the upper midline. An apparently malignant tumor was identified, involving the lower two or three centimeters of the esophagus and the upper five or six centimeters of the stomach. There was, however, no demonstrable evidence of local spread of the tumor or distant metastasis. Resection with some prospect of a cure seemed feasible.

Accordingly, after appropriate dissection and hemostasis, the esophagus was divided about 5 cm. above the diaphragm. Its proximal stump was closed by two lines of inverting sutures. The cardiac two-thirds or more of the stomach was resected on a line extending from the lower third of the lesser curvature to the upper third of the greater curvature. The gastric remnant was closed by two rows of inverting sutures except for a small opening at the greater curvature employed for the formation of a gastrostomy by pulling this part of the stomach to the outside and anchoring it in a stab wound made through the upper part of the left rectus muscle. Finally the abdominal incision was closed, a mushroom head catheter was placed in the gastrostomy and a nasal tube was passed into the esophagus to keep it free of accumulation of fluid by the constant application of negative pressure. The patient had no untoward reaction to the operation and postoperative convalescence was uneventful.

Pathology: "Squamous carcinoma of the esophagus infiltrating the stomach". It was never determined microscopically with certainty whether or not the division of the esophagus had been done with an adequate margin above the upper limit of the tumor. The uncertainty led to the decision to resect the esophageal stump surgically.

Operation No. 2: June 5, 1941. Partial Esophagectomy, Transpleural, Left; Esophagostomy, Anterior Cervical, Left. Twenty-four days after the abdominal operation described above, a consultant in thoracic surgery, Dr. E. C. Drash, removed the major portion of remaining esophagus and anchored the proximal stump as a fistulous opening in the neck.

Under general anesthesia an incision was made along the second interspace in the back on the left side, dividing the third, fourth, fifth and sixth ribs, retracting the scapula laterally, carrying the incision forward in the fifth interspace and through the resulting transpleural exposure freeing the esophagus. A lymph node adjacent to the closed esophageal stump, near the diaphragm, was sent for special microscopic examination. The esophagus was pushed upward into the left side of the neck and the chest incision closed.

An incision was then made in the left side of the neck, well above the clavicle at the posterior border of the sternocleidomastoid muscle. The esophagus which had been pushed up from below was delivered and divided and the proximal open end anchored in the skin incision to form a cervical esophagostomy. The operation was well tolerated.

Pathology: "Normal esophagus. Squamous carcinoma metastatic to lymph node". (The node was the one mentioned above.)

Convalescence following the two operations for the attempted eradication of the patient's tumor was uneventful and she was discharged from the hospital June 26, 1941, twenty-one days after the second operation.

Follow-up visits were made by the patient periodically and examinations did not show anything to suggest persistent, recurrent or metastatic tumor during more than five years of observation. Her weight did not at any time return to the preoperative level. She found life reasonably satisfactory but the care of the esophageal fistula on her neck and the gastrostomy on her abdomen was rather burdensome. She frequently asked about the possibility of re-establishing continuity between her pharynx and stomach.

It appeared that an attempt to establish continuity was justified by five years of freedom from tumor recurrence so she was re-admitted to the hospital October 10, 1946. Tentative plans were made to form an artificial esophagus by the technic described by Longmire and Ravitch[2] reported a few months previously.

On examination her weight was 71 pounds, her general appearance good, her esophageal and gastric fistulas clean. Blood examination showed hemo-

globin 74 per cent (11 grams); red blood cell count 4,300,000.

Operation No. 3: October 22, 1946. Transplantation Gastric Remnant from Abdomen to Subcutaneous Space, Sternal Region; Gastrostomy, Infraclavicular Region, Left. Under continuous spinal anesthesia with pontocain, later supplemented with light general anesthesia with nitrous oxide and oxygen the abdomen was entered by an incision made through the upper part of the left rectus muscle. No sign of persistent, recurrent, or metastatic tumor was found within the abdomen. The gastric remnant had somewhat the appearance of a large tube and this suggested the possibility of transplanting it so that it might still serve as a stomach while substituting anatomically for the esophagus. This seemed a much simpler and safer procedure than the Longmire-Ravitch operation. Reasonably accurate measurements and estimates confirmed the feasibility of such a plan. Division of the vessels between the spleen and the stomach and those in the gastro-colic omentum left the stomach adequately supplied by blood from the right side. The stomach was released from its gastrostomy attachment to the abdominal wall and pulled from the abdominal cavity through a midline incision about 5 cm. in length made immediately below the xiphoid process. Through the same incision long curved hemostats were pushed into the subcutaneous layer in the sternal region and a tunnel beneath the skin made from the xiphoid to the left sternoclavicular region. A small incision about 2.5 cm. in length was made in the skin beneath the inner part of the left clavicle as an exit for the subcutaneous tunnel. A long traction suture in the open end of the gastric tube was pulled through the tunnel and the open end sutured to the skin margins of the small infraclavicular incision for the formation of a new gastrostomy very close to the esophageal fistula just above the clavicle. It was noted that the pylorus had been pulled to a position just outside the epigastric fascial incision but there did not seem to be any interference with either blood supply or lumen in the region. The skin portion of the epigastric incision was closed by subcutaneous and skin sutures to cover the underlying gastroduodenal region. The former gastrostomy opening and the exploratory incision in the abdominal wall were both closed and a feeding tube left in the new gastrostomy stoma. The patient tolerated the operation easily and had an uneventful postoperative convalescence. Ground solid food and liquids were administered uninterruptedly through the new gastrostomy and the subcutaneous position of the gastric remnant in the sternal region did not seem to interfere with normal gastric function.

Operation No. 4: November 8, 1946. Gastro-Esophageal Anastomosis, End-to-End. Combined rectal and inhalation anesthesia with avertin and nitrous oxide-oxygen respectively was employed satisfactorily. The esophagus and stomach were both freed from their respective skin attachments in the region of the left clavicle and the skin separating them was undermined so that the esophagus could be pulled under the skin bridge and approximated to the gastric opening. End-to-end anastomosis was made with two rows of sutures, the anastomosis was allowed to retract beneath the skin bridge and the two small skin incisions closed. In this fashion continuity between the esophagus and gastric remnant was established and the patient was able to swallow liquid and solid foods again. She was discharged from the hospital November 14, 1946, six days after operation, and returned to her home.

Readmissions to the hospital were necessary as follows:

December 3-8, 1946, for infection and a small fistula at the site of gastro-esophageal anastomosis. Both responded promptly to wet dressings locally and penicillin therapy.

January 20-31, 1947, for stricture at or near the site of gastro-esophageal anastomosis. The stomach was incised January 28, 1947, the stricture dilated digitally and the stomach closed, a fifth operation.

February 8-March 17, 1947, for recurrence of the stricture. A temporary gastrostomy was established February 12, 1947, her sixth operation, and through it dilating sounds were passed at the time and on various subsequent occasions.

April 9-16, 1947, for closure of the temporary gastrostomy. The lumen of the anastomosis easily passed sounds 1.5 cm. in diameter so the gastrostomy was closed, her seventh and final operation.

Follow-up examinations have been made several times since then. The last examination was made February 14, 1949, two years following the final manipulation of her gastro-esophageal anastomosis. She stated she could eat any solid food she desired though she found it best to eat slowly and chew

thoroughly. The presence of her stomach in the subcutaneous tissue in the sternal region has not troubled her. (Figs.). She has never returned to her normal weight before her original operation, 85 pounds. She has weighed 71 pounds, the same that she weighed before the series of operative procedures to establish continuity between her esophageal and gastric remnants.

Fig. 1.

Figs. 1, 2 and 3.—Photographs of the patient February 14, 1949, 7 years 9 months after resection of esophago-gastric carcinoma; 2 years 3 months after completion of antethoracic transplantation of gastric remnant which substitutes for the esophagus. Various phases of gastric peristalsis in respone to ingestion of food.

Fig. 2.

Fig. 3.

COMMENT

Perhaps only a few features of the case reported deserve comment. First of all, it should be stated again that the method just described, the use of part of the stomach itself, transplanted in a subcutaneous tunnel in the sternal region, in substitution for the esophagus which had been removed, was not originally planned but was developed by adapting circumstances as they occurred.

The first operation was undertaken in the belief that the patient had a hopelessly inoperable carcinoma of the lower esophagus with extensive invasion of the stomach and that probably nothing more than a gastrostomy as a palliative measure might be done. A similar problem in a patient today, of course, would more likely suggest solution by a transthoracic laparotomy unless some specific contraindication should exist. However, at that time, May 12, 1941, although the first transthoracic operation of the sort in this country had been done by Phemister[1] January 26, 1938, the operation had not been often employed. At the Mayo Clinic, for instance, Walters[3] first successfully used the procedure January 14, 1942.

When the second exploration of the abdomen revealed the tubular character of the gastric remnant, it was evident that some adaptive process must have been at work. At the time of the first operation, five years before, the stomach had been divided along a straight line more or less paralleling a line tangent to the curve of the central part of the greater curvature. While the resection removed the greater part of the lesser curvature region of the stomach and left a much larger proportion of the greater curvature, the gastric remnant was less like a tube than a triangle. The remaining lesser curvature formed one side and the line of resection formed another. The two met in an obtuse angle and rested upon a long base, the remaining greater curvature. The gastric remnant, relieved for the most part of its lesser curvature anchorage and altogether of its esophageal fixation, was able to swing like a hammock between its two points of attachment, the duodenum at one end and the gastrostomy stoma at the other. It is not difficult to imagine how the weight of the stomach and its contents and the other forces related to gastric motility might encourage the gastric remnant to elongate and assume the form of a somewhat bulbous tube. This result was most fortuitous for it not only suggested the antethoracic transplantation but made it possible.

Antethoracic substitution for the esophagus, by the method described or by any other method, entails multiple operations. These in turn, while prolonging discomfort and increasing costs, may so reduce risk as to be thoroughly worthwhile in selected instances. These and other factors may always reserve a place for antethoracic operations in spite of the obvious advantages of the one-stage transthoracic operation with immediate anastomosis between the esophageal remnant and the remaining stomach or intestine.

Observation of this patient over a period of about two years indicates that the motor function of the gastric remnant has been maintained and appears to be quite adequate for digestive processes. In the upper half of the gastric remnant peristalsis can scarcely be made out, while in the lower half waves of peristalsis are strikingly visible and easily palpable as they follow one another downward and disappear through the small epigastric portal into the abdominal cavity.

As yet, no effort has been made to study further the function of the antethoracic stomach—esophagus. The exposed portion of the gastric remnant and the consequent ability to observe it directly would be ideal for investigation of gastric motility and influence of drugs, foods and other agents upon it. Worthwhile correlations between motor and chemical function and roentgenologic data might be possible.

CONCLUSION

The case described demonstrates that it is feasible to transplant a remnant of the stomach, preferably more or less tubular, to a subcutaneous tunnel in the sternal region, anastomose it to an esophageal remnant in the clavicular region and expect the gastric remnant to function satisfactorily as both a stomach and an esophagus.

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ADDENDUM. The patient was readmitted to the University of Virginia Hospital July 14, 1949 because of severe abdominal pain of twenty-four hours duration. Intestinal obstruction was suspected and the abdomen was explored immediately. It contained an estimated 1,500 cc. of fresh blood and clots. There was a gaping, bleeding rent in the extreme lateral aspect of the right lobe of the liver coinciding with one of many tumors in the liver, presumably metastatic in origin. Tissue was taken for study and the rent repaired. No other tumor was found elsewhere in the abdominal cavity. After microscopic study, the tumor was reported: "Metastatic adenocarcinoma. No definite primary site can be determined but I favor renal origin". It showed no similarity to the "Epidermoid Carcinoma of the Esophagus, grade 2 to 3, with metastasis to a lymph node" removed at the time of her original operation May 12, 1941. Postoperative convalescence was normal and she returned home in seven days, July 21, 1949. Her condition gradually deteriorated, however, and she died, presumably from her second carcinoma, August 25, 1949. No postmortem examination was made.

USE OF PENICILLIN FOR TREATMENT OF EARLY CASES OF SYPHILIS IN THE CITY OF RICHMOND*

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With the impetus given by World War II to the use of penicillin in the treatment of syphilis, public health concepts concerning the disease underwent radical revision. In 1947 the Syphilis Study Section of the National Institute of Health released effective schedules of treatment for syphilis with penicillin, oil, and beeswax, and combined schedules, using adjunctive treatment with arsenic and bismuth on an ambulant basis. As a result, many urban public health authorities felt that it was no longer administratively feasible to operate Rapid Treatment centers. In that year the Richmond Department of Health closed the Richmond Community Hospital, which was its Rapid Treatment Center and made plans to treat all early syphilis in its Venereal Disease Clinic. Late and other complicated syphilis by agreement was to be referred to the Out-Patient Department, Medical College of Virginia.

Many treatment schedules were considered, only to be abandoned because reports as to their efficacy and therapeutic effectiveness did not seem to warrant their practical use in a public health clinic. Finally, a treatment schedule was suggested by the Research Grants Division of the United States Public Health Service with a request that it be studied not only as to its therapeutic effectiveness, but also as to its application for use in a public health clinic, by making a detailed study of case-holding and case follow-up. Accordingly, it was agreed that we should use 600,000 units penicillin, oil, and beeswax, given daily for six days. A case was considered a case-holding success if six treatments were administered within a period of ten days. If treatment was not completed within ten days, it was a case-holding failure. As the clinics were open only from Monday to Friday, all patients going through the study had at least a two-day interval in their treatment series that could be considered an interruption. It was

NUMBER OF PATIENTS FOLLOWED AND RELAPSES OBSERVED

Diagnosis		1st 6 Months	2nd 6 Months	3rd 6 Months	4th 6 Months	Total Relapses In Group
Primary	No. followed	57	41	12	10	
	Relapses	2	5	1	0	8
Secondary	No. followed	78	51	15	11	
	Relapses	8	4	0	0	12
Early Latent	No. followed	138	91	26	17	
	Relapses	6	7	7	0	20
Sero-resistant Muco-cutaneous relapse and Inadequate previous treatment	No. followed	50	32	6	6	
	Relapses	3	4	0	0	7
Total	No. followed	333	215	59	44	
	Relapses	19	20	8	0	47

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, Va., October 9-12, 1949.

agreed that this interruption would not seriously affect the therapeutic results of the schedule.

Under this treatment schedule 465 individuals were treated; however, only 454 will be included in the report, as eleven individuals had a diagnosis of late latent syphilis or the record had been misplaced and could not be verified.

The initial diagnoses of this group were as follows: primary, 77 (22 of these were darkfield positive serology negative and 55 were serology positive); secondary, 106; early latent, 191; and a group of 80 with a diagnosis of sero-resistant, mucocutaneous relapse or inadequate previously treated early latent syphilis from some other clinic. (Also included in this group are all of our own relapse cases that were re-treated.) Under the studies protocol each treated patient was to report back once a month for a serologic test for syphilis for the first year and every three months during the second. At the end of the first year, spinal fluid examination was to be made. In some instances, however, spinal fluid examinations were not made until eighteen months had elapsed. Most of the spinal fluid examinations were done as scheduled, only twenty-five having been done later than the fourteenth month. Because of this, no break-down is attempted as to the point at which spinal fluid either became significantly positive or, conversely, failed to become negative.

Examining the outcome of treatment clinically, serologically, and by spinal fluid, it is found that the relapses tended to occur most often in the sixth month; however, they were spaced out in a low curve from the third month through the thirteenth. In the group of primaries treated, fifty-seven were followed for six months with two relapses, both of which were believed to be bona fide reinfections. In the second six months there were five relapses in forty-one followed for twelve months, and in the thirteenth month one more relapsed in the sixteen patients followed for eighteen months. After the eighteenth month no other relapses occurred. This gives a total of eight relapses, or 10% in the group of primaries.

Of the 106 patients with initial diagnosis of secondary syphilis placed under treatment, seventy-eight were followed six months with eight relapsing; (one of these occurring in the sixth month was believed to be a true reinfection). Fifty-one were followed from six to twelve months with four relapses; fifteen were followed an additional six months up to eighteen months with no relapses, giving a total of twelve known relapses in the group, or a percentage of 11%.

In the group diagnosed as early latent, relapse tended to occur later than it did in either of the above two groups with a few relapses occurring as late as the eighteenth month. Of the 191 patients in this group started on treatment, 138 were followed for six months, with six relapses; ninety-one were followed twelve months, with seven relapsing towards the end of the period; twenty-six were followed for eighteen months with seven relapsing (of these, two had positive spinal fluid examinations without positive serologies). A total of twenty relapses occurred in this group, or a percentage of 10%.

In the group of sero-resistant, muco-cutaneous relapse or inadequate previous treatment, eighty individuals were treated, one of whom immediately relapsed and was re-treated. Two relapsed in the sixth month. There were no other serologic relapses. In the twelfth month, however, four patients were discovered to have positive spinal fluids, all of whom had negative or satisfactory serologic tests. A total of seven relapses occurred in this group or a percentage of 9%.

It is interesting to note that neither the primary nor secondary groups ever showed a positive spinal fluid examination. Out of 197 spinal tests done there were eleven positives, seven in the early latent group and, as mentioned, four in the mixed diagnosis group. Of these, one was re-checked two weeks later for verification and found to be negative. All ten patients with positive spinals were re-treated but have not been followed sufficiently long to make any statement as to their therapeutic outcome.

The follow-up for the entire group showed that of the 454 treated, 333 were followed six months with nineteen relapses; 215 were followed twelve months with twenty relapses; and fifty-nine were followed eighteen months showing eight more relapses; forty-four were followed two years with no further relapses developing. In all, forty-seven patients had some form of relapse and were re-treated, giving an accumulated re-treatment rate of 10%.

We feel safe in stating that this rate compares favorably with other treatment schedules.[3] In this study of 454 cases evaluated as to the patients' faithfulness in coming to treatment, there were only five individuals who became delinquent, all of whom

were subsequently re-treated. When one thinks back to the old arsenical bismuth type treatment, with many clinics holding less than 20% of their patients to the successful completion of minimal adequate therapy (20 arsenical, 20 bismuth), and the clinics with the highest ratings achieved only 45% success in their case-holding, it is obvious that ambulatory penicillin, oil, and beeswax has a tremendous advantage over the former system of therapy. Of the cases adequately treated on this schedule, one can conclude that it permits ease of case-holding and has a reasonably low-accumulated re-treatment rate, with the added advantage of rendering an infectious patient almost immediately non-infectious.

At a later date a report on a second series of cases treated with 1,200,000 units of crystalline penicillin with 2% aluminum monosterate given once a week for four weeks will be reported and a comparison made as to the therapeutic efficacy of this group of cases and the case-holding success as compared with the one here reported. From the study reported above and others in the literature, it becomes apparent that acceptable dosage schedules which are therapeutically effective and permit the ambulant treatment of syphilis are available. From the case-holding aspects of the study and from the ease of case-holding, we see no reason why the treatment of syphilis cannot be carried on entirely by the family physician. The public health clinics then could be converted to diagnostic centers, where their functions would be to provide spinal fluid examinations, darkfield examinations, and other technical procedures. We believe that a relationship similar to the one existing between the Rheumatic Fever Consulting Service and the Tumor Diagnostic Clinic Service, the Chest Clinic and the private physician, should be established. For example, patients with suspected tuberculosis, among indigent and medically indigent, are referred to the Chest Clinic by their family physicians for physical examination and x-ray, with the clinic rendering detailed reports to the referring doctor.

In order for this to be completely successful, the family physician will have to assume the responsibility for examining the marital partner of the case to determine possible co-joint infection. He should also obtain contact information as to the patient's extra-marital sexual contacts and report these to his Health Department for investigation. The Richmond City Department of Health is merging its clinic with Medical College of Virginia; the clinic will function for the treatment of indigent and medically indigent. This clinic will also provide consultation service similar to the type outlined above, for physicians practicing in the City of Richmond. This service will function in cooperation with the consultation service recently announced by the State Department of Health.

In summary, it is believed that ambulatory penicillin is by all odds the treatment of choice. Therapy with either beeswax and oil or 2% aluminum monosterate has rendered the treatment of syphilis no longer a clinic function, but one belonging to the private physicians, since the acceptable schedules are easily adaptable to office practice.

DISCUSSION

DR. THOMAS W. MURRELL, SR., Richmond: Doctors Bowden and Holmes have presented a carefully prepared review of four hundred and fifty-four cases of early syphilis which shows the six hundred thousand units of penicillin given every day for six days constitutes a successful treatment compared with other methods and other days. This is an amazing thing and almost incredible to one who looks back to the three years of mercury and iodides and who graduated into the eighteen months of arsenic and bismuth as a modern and dramatic advance in the progress of therapy—six days as against all that weary time. If a syphilographer had only one novel to read it should be "Twenty Years After", and the old D'Artagnans who through the years have been crossing blades with Monsieur Spirochete de Morbus Gallicus can be forgiven if, when they read this paper, there be a suspicion of oversimplification. This is justified because as far as intensive penicillin is concerned only five years of the twenty has passed. God grant that it be so, for, if so, then syphilis comes back to where it properly belongs—to the professional sanctity of a physician's office and can almost be reduced in its early stages to the category of a minor disease.

A medical student might ask, why all this time for evaluation? The actual answer is that serology, which is constituted the judge and jury of therapy, has not kept pace with therapy, and clinical judgment has to make up the deficiency.

I once heard Charles Rein facetiously say that the serologists had done such a good job within their field that the medical profession had become Wassermann-fast. He meant, first, that the bulk of the medical profession with its allied help consider that a positive Wassermann is indubitable proof of syphilis, which it is not. Second, it is an accepted idea that the degree of a Wassermann report, that is, four, three, two and one plus, is proportionate to the pathology present, and this is not true, even

though it is helpful in evaluating therapy; lastly, that a negative report is full and final evidence of cure, and it is not and has never been. Yet this has been the standard set. For forty years we have worked to get something which we did not trust when we got it, and that does not make and never has made sense in any language. In scientific language, a phenomenon is a fact which is presented as a fact without explanation or elucidation. Actually that is what the Wassermann has always been. Nowhere in the field of practice are such momentous decisions made on such debatable evidence. Consequently, there is in common use a phrase—"serological relapse". What does this actually mean? To propound this question is like poking a stick in a hornet's nest for, regardless of conviction, there are so many exceptions to the rule that the only completely honest answer is, "I don't know". A mariner would be in a comparable state if he had to depend on a compass which he could not trust. Such a man would probably toss it overboard and go back to the stars, which have never lied to him. In medicine the stars are clinical evidence and time.

Obviously, then, what we most need is not better therapy but a dependable negative test, serological or otherwise. It should be borne in mind that this routine is one for early syphilis and its brilliant results do not absolve in any way the physician from his duty of spinal puncture before the books are closed. Even with this, in the light of our present knowledge only those who are alive fifteen years from now will be able to properly evaluate this paper.

DR. W. L. EASTLACK, South Boston: Up to the present there has never been an answer to syphilitic prophylaxis, but I understand that in the last few months there have been some very outstanding revelations, and I should like for Doctors Holmes and Bowden to discuss those, please.

DR. DUDLEY C. SMITH, Charlottesville: This paper of Drs. Holmes and Bowden is very timely, because we have just reached the stage of experience and development in the use of penicillin in the treatment of early syphilis justifying definite statements. I think we can say definitely that penicillin is the most effective remedy yet discovered in the treatment of syphilis, but it is not one hundred per cent curative even in high dosage. In the University of Virginia Hospital Clinic we have treated since April 1, 1944, about 500 cases of primary and secondary syphilis, with a failure rate of about 22 per cent. This is not as good as reported in this paper. Some of the difference is due to the fact that we used a low dosage and a short time schedule on the early cases when the work was started; and, also, the case follow-up is not too high in Drs. Holmes and Bowden's report.

Of the failures at the University Clinic, 52 per cent were definite clinical relapses (we attempted to rule out re-infections), 22 per cent of them were serological relapses, and 26 per cent were classified as serologic failures due to the fact that they were sero-resistant or continued to have definitely positive serological tests.

In the last two years our schedules of treatment have been longer, and with larger amounts of penicillin. In this particular group, with a one to eighteen months' follow-up (and that is a rather short follow-up time), we have had only 6 per cent failure rate.

Procaine penicillin in oil with aluminum monostearate seems to be the best form of this preparation yet available for ambulatory therapy. If you give 1,200,000 units of this substance (that is 4 cc. of the usual preparation) intramuscularly at one site (not divided between the hips), you get an effective blood level for about one week. If you give this same dosage—4 cc.—in each hip (total 8 cc.), you get an effective blood level for from eleven to sixteen days. For one treatment that is remarkable.

The time factor in treatment, as well as the total dosage, is very important; and I am really surprised that we have only about 10 per cent failure rates when the treatment was given for only six days. There will be a number of relapses unless some type of treatment is continued for three to four months. I am more and more convinced that the Spirochaeta pallida are not easy to "knock-out". It is my opinion that the minimum treatment at the present time for early syphilis would be 4 cc. of procaine penicillin in oil with aluminum monostearate weekly for five weeks and ten weekly injections of bismuth—one injection a week for ten weeks, starting the bismuth at the time you start the penicillin. The minimum treatment period, then, would be ten weeks. That would be 6,000,000 units of penicillin and 1500 mg. of bismuth.

I should like to add ten years to Dr. Murrell's recommendation about the evaluation of any antisyphilitic drug, making it twenty-five years instead of fifteen, because cardiovascular syphilis usually takes from twenty to twenty-two years to show itself.

I may be getting a little ahead of Dr. Bowden on this, but I had written down here a recommendation of Drs. Schoch and Alexander about treating syphilis in the incubation period. As you all know, about 75 per cent of all sex partners of early infectious syphilitics become infected. Drs. Schoch and Alexander have been able to prevent infection in these cases in 90 per cent of the cases by giving treatment immediately. This is particularly effective in preventing what is called "pingpong" syphilis; that is, one partner will have syphilis and the other will catch it, the first partner will be treated and cured but become re-infected from the other and so on.

Patients with suspicious clinical lesions should not be treated until a confirmed diagnosis is made. The practice of giving an injection of penicillin and then sending the patient in for a darkfield examination should be discouraged.

DR. E. E. BARKSDALE, Yater Clinic, Washington, D. C.: In answer to Dr. Eastlack's question I should like to make one statement. We have some unpublished studies. We think that 600,000 units of penicillin given within six hours after exposure will prevent both gonorrhea and syphilis. Moral: if you have been exposed, take penicillin.

DR. HOLMES, closing the discussion: Dr. Outland has told me that I shall have to close the discussion in three minutes, but I shall take a few seconds to thank Dr. Murrell and Dr. Smith for their discussion.

Dr. Murrell has very charmingly and very clearly pointed out the limitations of serological tests in syphilis. I am afraid we have been inclined to rely entirely too much on serology. As Dr. Murrell and Dr. Smith both said, the final answer in these cases will not be known until an interval of at least fifteen to twenty-five years has gone by.

There are about fifteen to twenty different schedules of penicillin therapy, all of them effective, depending somewhat upon the individual doctor's likes and dislikes. As Dr. Smith pointed out, our failure rate and follow-up rate have not been quite as good as in other sections of the country. That is true, but as public-health officers we are primarily interested in the prevention of the spread of infection by chemically quarantining the infectious early case. Further, another important point is the current belief that penicillin will reduce this disease to a minor public-health problem long before we as clinicians can evaluate its therapeutic efficacy. If penicillin has accomplished no one other thing it has certainly reduced the infectious period and in turn reduced the reservoir of infection, as is being attested by the markedly reduced morbidity rates now being reported.

The prophylaxis of syphilis is now in the early research stages, and the men responsible for that research—Dr. John Mahoney, at Staten Island, and Dr. Harry Eagle, of Johns Hopkins, have not as yet published their studies. Dr. Schoch, of Dallas, Texas, has had remarkable success in averting pingpong syphilis. Dr. Eagle reported remarkably successful results in averting gonorrheal infection in personnel of the United States Navy stationed in Mediterranean ports.

I believe we are rapidly approaching a one-injection treatment for syphilis, which will be of great benefit to public health. In Richmond we are at present preparing to conduct a multi-phasic laboratory screening survey of chronic diseases in which we will test for syphilis. If it were possible to give the positive reactors a one-shot treatment for syphilis on the spot, think of the results that might be expected.

I want to thank Dr. Murrell again for his very charming discussion and to thank him for pointing out the weaknesses that we know exist in the paper.

Floral Eponym

Afzelia Leguminosar

AFZELIUS, ADAM (1750-1837)

THIS Swedish botanist was born at Larf, Vastergoland. He founded the Linnaean Institute at Uppsala in 1802 and in 1812 became Professor of Materia Medica at the University. In addition to various botanical writings, he published the autobiography of Linnaeus in 1823. His brother Johan was Prefessor of Chemistry at Uppsala and another brother, Per (1760-1843) was Professor of Medicine.

Afzelius is a small genus of trees in Africa and the Pacific Islands. A. bijuga, widely distributed in Oceanica is the "ifit" used in Guam as a cabinet wood and for general construction purposes.

LEIOMYOMA OF ESOPHAGUS—REPORT OF CASE

I. A. BIGGER, M.D.,*
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and
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Benign tumors of the esophagus are relatively infrequent but, when identified during life, they have usually attained considerable size. In some of the cases that have been reported, the tumors have been very large and pedunculated and have not produced any significant symptoms related to the esophagus. The elasticity of the wall of the esophagus usually provides adequate space for passage of food into the stomach, and dysphagia is seldom a troublesome feature.

Fig. 1.—Roentgenogram showing smooth obstruction to passage of barium in mid-portion of esophagus.

The following case is interesting because of the relatively small size of the tumor and the severity of symptoms.

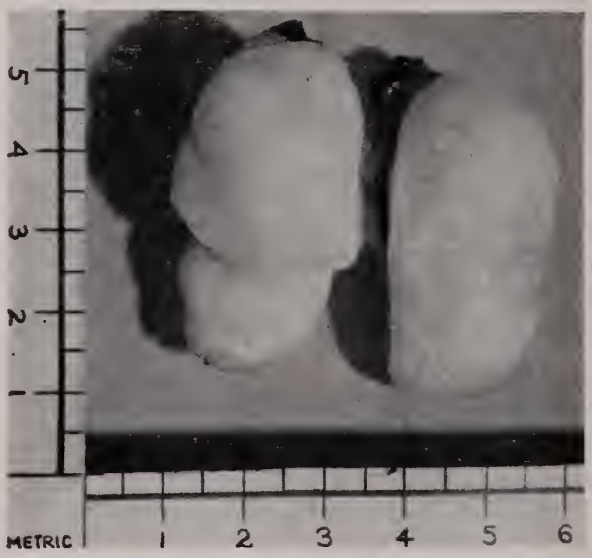

Fig. 2.—Gross specimen, leiomyoma of esophagus.

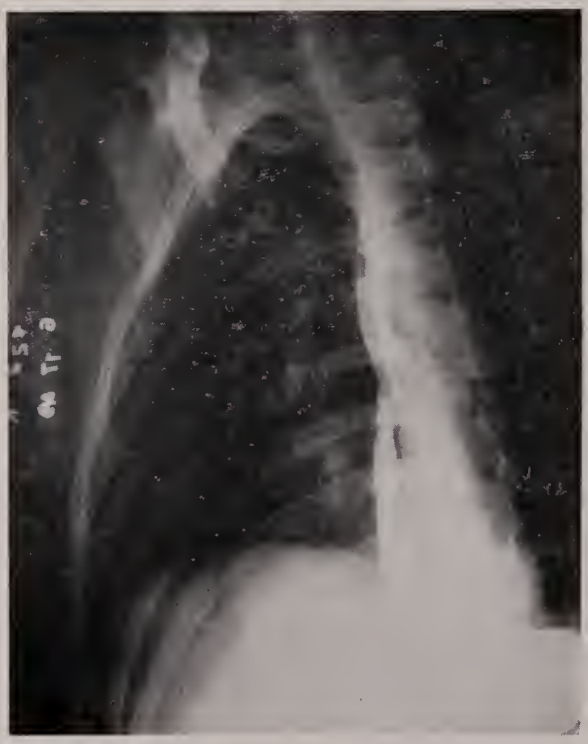

Fig. 3.—Roentgenogram showing normal esophagus post-operatively.

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†Director of Student Health Service, Medical College of Virginia.

REPORT OF CASE

A student of pharmacy, aged 24 years, was examined on May 31, 1949. He had been well until three years previously when he had begun to have intermittent obstruction to passage of both solid food and liquids through the esophagus. The obstruction was noted in the mid-esophageal region, and because the patient had more difficulty when emotionally disturbed, his symptoms were attributed to "nervousness." He had never had complete esophageal obstruction, pain or regurgitation of food, although several times during sleep he had awakened with his mouth full of saliva.

Roentgenoscopic examination three months previously had revealed a smooth obstruction to passage of barium in the midportion of the esophagus (fig. 1). After this the patient was advised to limit his diet to soft food, on which regime he had been fairly comfortable.

Esophagoscopic examination on June 2, under intravenous anesthesia supplemented by insertion of an intratracheal tube, disclosed a sessile tumor covered with normal mucous membrane in the middle third of the esophagus. The mass protruded into the lumen of the esophagus from the left and anterior walls and was apparently 6 cm. in length. There was no evidence of ulceration, and no effort was made to remove tissue for microscopic study as the tumor was considered benign and probably muscular in origin.

Surgical removal of the tumor was advised, and on June 11, 1949, the tumor was removed from the esophagus, leaving intact the mucous membrane covering the mass (fig. 2). The patient was dismissed from the hospital eight days later, at which time he was free from symptoms, and roentgenoscopically barium passed through the esophagus without interruption (fig. 3).

Find Ethyl Alcohol Unsatisfactory Disinfectant for Wounds.

Ethyl alcohol, the ordinary alcohol of commerce and pharmacy, should not be used as a disinfectant in wounds or on raw surfaces of injured areas, according to a Salt Lake City doctor who made a study of the substance.

The antibacterial action of ethyl alcohol is neutralized by proteins present in the wound, says Dr. Philip B. Price of the University of Utah College of Medicine. (*Archives of Surgery,* March 1950).

Further he states that the alcohol is painful, injures wound tissues and delays wound healing. Also, simple solutions of ethyl alcohol are not satisfactory agents for cold sterilization of surgical instruments.

Seventy per cent alcohol (by weight) in water, however, is still believed to be the "solution of choice" for disinfection of the skin, he says. On healthy skin, this solution is powerfully destructive to germs and harmless to the body.

Women Are More Tearful Than Men.

Young women have more active lacrimation than young men. In other words, the female of the species can turn on the tears more copiously. Two Rochester (Minn.) ophthalmologists have proved it by examining the eyes of 114 males and 117 females. They report their findings in the February issue of *Archives of Ophthalmology.*

The study was made by Dr. John W. Henderson of the section on ophthalmology, Mayo Clinic, and Dr. Wendell A. Prough, fellow in ophthalmology, Mayo Foundation. They state that "Sex was a factor in the rate of flow of tears among young persons (16 through 29 years of age). Females exhibited a definitely greater flow of tears than males."

The normal flow of tears for men in this age group seemed to be slightly more than half that of women of the same age group, according to the doctors.

ANTICOAGULANT THERAPY IN ACUTE MYOCARDIAL INFARCTION*

GEORGE B. CRADDOCK, M.D.,
Lynchburg, Virginia.

The use of anticoagulants in the treatment of patients with acute myocardial infarction has been accepted fairly widely at present. Encouraging reports have come from Peters, Guyther and Brambel[1], Parker and Barker[2] of the Mayo Clinic, and Nichol and Page[3] of Florida. Finally, in addition, there is the large series of Irving Wright and his committee, in which over eight hundred cases were studied with one-half serving as controls, and in which sixteen large and well known hospitals were used, such as Peter Bent Brigham Hospital and Massachusetts General Hospital in Boston, The New York Hospital in New York, Cincinnati General Hospital, etc.

In a small private practice, such as mine, and in a small charity service, such as that of the Lynchburg General Hospital, it is impossible to obtain more than a rough clinical impression of the use of anticoagulants in the treatment of acute myocardial infarction. Surely all of us, before we ever heard of the use of heparin or dicumarol in treatment, have seen patients extremely ill with this condition who recovered. Because of this fact, in order to prove the value of the use of anticoagulants, we have to turn to the literature where larger series of patients are studied.

First, what are we trying to accomplish with the anticoagulants? It is to prevent the complications of the myocardial infarction. Deaths which occur from the original infarct, from cardiac arrest, ventricular fibrillation, or cardiac rupture will not be prevented by anticoagulant therapy. But it is in the prevention of thrombo-embolic phenomena that the anticoagulants are believed to be useful. The three main thrombo-embolic complications are: (1) phlebothrombosis of the peripheral vein, as in the legs with pulmonary emboli; (2) a mural thrombus over the area of the infarcted heart wall, the thrombus being inside the ventricular cavity with resulting embolus to the brain, to the extremity, or to the mesentery; and (3) a second coronary artery thrombosis.

It has been found that in the first three weeks after the initial acute coronary artery thrombosis, the clotting time of the blood is actually reduced (i.e., tendency to clot has been increased); that in patients with myocardial infarction complicated by failure, digitalis[5,6,7] will also increase the tendency to clot; and also that a stagnant circulation will favor the formation of peripheral phlebothrombosis with peripheral emboli. So, a middle-aged patient who has been in bed with an acute myocardial infarction, his blood clotting time actually reduced by both the infarction and digitalis and his circulation rendered stagnant by slight or greater heart failure, is an ideal candidate for phlebothrombotic episode in his femoral or popliteal veins and complicating pulmonary embolus. Our surgical friends fear the complication even in much younger and more robust patients upon whom they have operated and take steps to prevent this by early ambulation, anticoagulents, or prophylactic vein ligation. Surely the use of anticoagulants (or vein ligation) is indicated to prevent this complication in our patients with acute myocardial infarction. Nay and Barnes[8], in the analysis of one hundred patients with acute infarction, found this complication of pulmonary embolus in fourteen.

The second thrombo-embolic phenomenon at which prevention with anticoagulant therapy is aimed is a mural thrombus, part of which breaks off, resulting in a peripheral embolus. This is really one of the saddest complications. A patient has had a severe infarction, appears to be doing well, then suddenly has a cerebral embolus with resulting hemiplegia or an embolus to his leg with resulting arterial occlusion, gangrene, and finally amputation. These complications are always terribly distressing. It is believed that prompt use of anticoagulants will prevent a mural thrombus with its dread systemic emboli.

The third thrombo-embolic complication is a second coronary artery thrombosis; it is believed that anticoagulant therapy is less likely to prevent this complication than the first two discussed.

Let us now look at the published results—see table. First, Parker and Barker[2] of the Mayo Clinic report fifty cases treated with dicumarol. These are compared with one hundred cases previously reported at

*Read before the South Piedmont Medical Society at South Boston, Va., November 9, 1949.

the Mayo Clinic by Nay and Barnes, which had no anticoagulant therapy and thereby serve as controls. Thirty-seven per cent of the controls had vascular complications and only seven per cent of the treated cases.

	Percentage of Thromo-Embolic Complications	Mortality Percentage
Peters et al.[1]		
Controls	16	20
Treated cases	2	4
Cases taking digitalis		
Controls	--	53
Treated cases	--	12.5
Nay and Barnes[8] *and Parker and Barker*[9]		
Controls (N&B)	37	13
Treated cases (P&B)	4	10
Griesman and Marcus[10]		
Controls	21	35
Treated cases	4	9
Cases taking digitalis		
Controls	29	53
Treated cases	0	20
Wright et al.[4]		
Controls	26	24
Treated cases	7.5	14.9
Mortality divided by age groups		
Under 50		
Controls	--	12
Treated cases	--	9
50 to 59		
Controls	--	12
Treated cases	--	11
60 to 69		
Controls	--	32
Treated cases	--	19
70 and over		
Controls	--	45
Treated cases	--	25

Also, in Peters'[1] report of sixty cases serving as controls and fifty cases treated with dicumarol, clinical embolism occurred in sixteen per cent of the control cases and two per cent of the treated cases. Mortality of control cases was twenty per cent and of treated cases four per cent.

And, finally, we have Wright[4] and others in their eight hundred case report. In this series, patients admitted on even days were not given anticoagulants while those admitted on odd days were treated with anticoagulants, age group being about the same. Thirty per cent of the treated group and twenty-three per cent of the control group were judged as severe infarctions. Over-all mortality was twenty-four per cent for controls, fifteen per cent for treated patients. Deaths preceded by one or more thrombo-embolic complications were ten per cent of controls and three per cent of treated group. In the breakdown of deaths according to age groups, under 50, 50-59, 60-69, and 70 and over, it was clearly shown that the greatest reduction of mortality in the anticoagulant treated group over the control group was in patients over sixty.

All of these reports point with good evidence to the real value of anticoagulant therapy in reducing greatly the thrombo-embolic complication.

Next, the method of using the two drugs may be discussed. Some workers start the patient on both heparin and dicumarol treatment, omitting the heparin as soon as the patient's prothrombin time is at the desired level, and continuing the dicumarol. Others use only dicumarol therapy, starting out with a large initial dose of 200-300 mg. the first one or two days, and following the dosage by prothrombin determinations. Another method is to use heparin alone, as is done by Loew[9], who uses heparin in a menstruum for prolonged action.

The control of dicumarol dosage by prothrombin time determinations is stressed by all who have written about this form of treatment. Most writers emphasize that daily prothrombin time determinations should be done and that comparison with control determinations should be made each day. With these figures and by a chart, the prothrombin determinations can be found expressed in percentage of prothrombin concentration. The Mayo Clinic recommends that ten to thirty per cent prothrombin concentration be held. Others recommend that the patient's prothrombin time be held at 2 to 2.5 times the control; that is, if the control time is fifteen seconds, then it is desired to have the patient's time thirty to thirty-seven and five-tenths seconds. Should the control time be over twenty seconds, it is felt that the supply of thromboplastin is not good, and a fresh supply should be obtained.

My experience has been confined to dicumarol. I "shoot" at obtaining an adequate prolongation of the prothrombin time as soon as possible, and I attempt to maintain the patient's prothrombin time 2 to 2.5 times as great as the control level.

The dangers of anticoagulant therapy are excessive hemorrhage. With careful observation and adequate laboratory procedures (clotting time for he-

parin and prothrombin time for dicumarol) these complications are unlikely. Mild nose bleedings have been reported; also hematuria, and even cerebral hemorrhages. I have had one patient with dicumarol therapy have hematuria. This was not a patient with myocardial infarction, but a patient in whom dicumarol therapy was being tried for glaucoma at the request of an ophthalmologist.

Should the prothrombin time become too long (or the prothrombin concentration become too low), synthetic vitamin K (menadione) may be administered in 72 mg. dose intravenously or intramuscularly; and this will usually bring the prothrombin time to a safe range in twenty-four hours. If more urgent return of the prothrombin time is needed, prothrombin itself can be administered by giving a *fresh* blood transfusion.

For overdosage of heparin, a fresh blood transfusion may be administered, and also *protamine*[9] has been recommended to counteract the heparin. I have had no experience with this.

A few cases, illustrative of the hazards of emboli, can be discussed.

First, in 1938, while serving as assistant resident in medicine at the Medical College of Virginia, in the emergency room of the old Memorial Hospital, I saw a patient—a white male about sixty-five years of age—complaining of violent abdominal pain. He gave a history of an attack of severe chest pain twelve to fifteen days previously when he was confined to bed by his physician. The present attack of severe abdominal pain had begun an hour or two before his admission to the hospital. This patient was very ill. He had generalized abdominal tenderness, and bloody material was found on the examining finger on rectal examination. Exploratory laparotomy revealed the entire small intestine to be gangrenous. The patient died the next day, and autopsy revealed a healing myocardial infarct with a mural thrombus, part of which had broken off and been carried by the blood as an embolus to the mesenteric artery, causing the gangrene of the intestine. Prompt anticoagulant therapy probably would have prevented this catastrophe.

Another case is W. E. P., a white male, age twenty-nine, who had an acute posterior wall myocardial infarction on September 29, 1941, and was hospitalized October 3, 1941. He was treated with the conventional bed rest, and on October 8, 1941, his fifth hospital day, I was called because the patient was suffering with severe, excruciating pain in the right leg. Examination revealed that the right leg and lower third of the thigh were very painful, pale, and cool, and no pulse could be felt in the dorsalis pedis, posterior tibial or popliteal artery. He was given morphine, atropine, whiskey, and one vial (10 c.c.) of heparin in glucose solution intravenously. This was all the heparin in Lynchburg at that time. To our pleasant surprise—about two hours later the patient suddenly improved; the pain in the leg disappeared; the color and warmth returned to the foot; and the pulse returned in the dorsalis pedis artery, etc. This occurred at the time that he was being seen by surgeons considering an embolectomy.

Another interesting case is Mrs. D. L. P., eighty-nine year old white woman, who was seen on April 19, 1946, for dyspnea, orthopnea, palpitation, and ankle edema. Examination revealed a patient in congestive heart failure with auricular fibrillation, a rapid ventricular rate (130), and congestive rales at each lung base. This patient was hospitalized and digitalized—still her heart rate remained rapid. Electrocardiogram revealed an acute posterior wall myocardial infarction. Since she had never been confined to bed, she was still allowed to get up to the chair each day. However, on May 7, 1946, the eighteenth hospital day, a slight fever (99.6°F.) was noted; a positive Homan's sign was elicited in the right leg, and tenderness was present on pressure over the right calf, indicating a complicating phlebothrombosis. Since we were not using dicumarol for myocardial infarction, a surgical ligation of the femoral vein was done by Dr. J. E. Haynsworth without any complications. Her convalescence was otherwise uneventful; and now, three years later, she, at the age of ninety-two, is still alive and able to be about. I do feel, however, that a pulmonary embolus at that time would have been fatal.

Another case, W. B. T., white male, age fifty-eight, is described because he is the first patient on whom I have used dicumarol treatment. He came to me at the Virginia Baptist Hospital August 31, 1947, referred by his physician because of severe, excruciating pain beginning the night before, eased with morphine. This patient walked into the hospital. Electrocardiogram revealed an acute anterior myocardial infarction. That afternoon, pain recurred

and was severe, and a loud pericardial friction rub was heard. He was never in clinical shock nor in congestive heart failure. Dicumarol treatment was begun the day of admission, and as soon as an adequate prolongation of the prothrombin time was obtained, his pain ceased, and his general condition improved. It was this apparent clinical improvement with dicumarol that encouraged me to continue its use.

I have four other case reports in which dicumarol was used and in which our results were not so happy.

J. M., white male, age fifty-nine, came to my office for physical examination on April 23, 1948. His family history was terrible from the point of hypertensive vascular disease. He had had hypertension for fifteen years, but in the last six weeks he had had substernal pain on exertion; and, at times, even at rest. This man's blood pressure was 240/160, eye grounds showed grade 3 arterial changes. Electrocardiogram showed change of left axis deviation with inverted T wave in leads 1, 2, 3, and precordial leads. A few days later I was called to see the patient because of pain in substernal area which was unrelieved by nitroglycerine and required an opiate. Several other attacks required opiates, and finally it was necessary to teach his wife to give a hypodermic to keep him easy. All during this time his electrocardiogram showed no further changes. However, on June 7, 1948, a more severe attack occurred; electrocardiogram showed an acute anterior wall infarction. He was hospitalized on June 7, 1948, and dicumarol therapy was begun on the same day. In spite of a therapeutic level obtained, as evidenced by his prothrombin time (prothrombin concentration 25%), the patient died on June 10, 1948, his third hospital day. Autopsy revealed a massive myocardial infarct, but there was no evidence of a mural thrombus.

Mrs. L. W., white woman, age seventy-three, suffered a massive myocardial infarction on April 27, 1949. It appeared she would die the night of the attack. After this, she improved and seemed to be heading for a recovery. Although dicumarol treatment was begun at once, a sufficient lowering of her prothrombin time was not obtained as soon as we wished, and she had an embolus to the left leg on April 29, 1949, two days later. By raising the dosage, by lumbar sympathetic block, and intravenous alcohol injections, the coldness, pain, and pallor disappeared from the foot. However, on May 2, 1949, seven days after admission, and while her prothrombin concentration was eleven per cent (and patient's time was 2.5 of the control's), she had another myocardial infarction and died within forty-five minutes. An autopsy could not be obtained. I feel that this patient had a second myocardial infarction while on adequate anticoagulant treatment.

R. L., white woman, age sixty, was seized with excruciating substernal pain about 10:30 P. M. April 30, 1949. She had had severe hypertensive cardiovascular disease for nine years, blood pressure ranging from 240/140 to 189/110, and her eye grounds showing severe vascular changes. She was relieved by intravenous morphine and atropine, sent to the hospital by ambulance and placed in oxygen tent. Dicumarol treatment was begun, and an adequate prolongation of her prothrombin time was obtained and kept through her hospital stay. However, she did not do well; left ventricular failure occurred and recurred in spite of digitalization, oxygen, and mercurial diuretics. Death occurred on May 25, 1949, her twenty-fifth hospital day, from congestive heart failure. Adequate prothrombin concentrations were maintained.

Mr. V. F. M., white male, age fifty, was first seen by me July 8, 1949, in consultation for a massive arterial embolus to his right leg. His myocardial infarction had occurred six days earlier and he had not received anticoagulant treatment. In spite of dicumarol, sympathetic nerve block, etc., he required an amputation on July 17, 1948.

SUMMARY

A brief review is given of a series of cases of acute myocardial infarction treated with anticoagulants reported in the literature. The reason for anticoagulant treatment, i.e., the prevention of the thromboembolic complications of acute myocardial infarction, is discussed. These thrombo-embolic complications are: (1) peripheral phlebothrombosis with pulmonary emboli; (2) mural thrombus with systemic circulation emboli; and (3) a second coronary thrombosis. It is believed that anticoagulant therapy is effective in preventing these complications if it is given adequately, and it is believed to be especially indicated in patients with acute myocardial infarction who are over sixty years of age and particularly those in whom digitalis therapy is used. A few cases

of myocardial infarction illustrating thrombo-embolic complications are given.

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411 Allied Arts Building.

Report New Treatment for Carbon Monoxide Poisoning.

Treatment of suffocation from carbon monoxide gas by injections of procaine hydrochloride, a local anesthetic, is reported in the April 8 Journal of the American Medical Association. Seventeen of a group of 23 patients who received the new treatment made good recoveries, according to Drs. Edwin W. Amyes, John W. Ray and Norman W. Brockman of the College of Medical Evangelists and University of Southern California School of Medicine.

The remaining six patients either died or did not fully recover. In this group the drug was given long after the exposure to carbon monoxide, or there were additional complicating factors, according to the doctors.

All except one of the 23 patients had become unconscious in a room in which there was no ventilation and where an open gas flame was burning.

Procaine hydrochloride previously had been used by doctors in France to treat prolonged coma due to carbon monoxide poisoning. They reported startling improvement in a few cases, the Los Angeles doctors say. Treatment of this condition theretofore had been unsatisfactory.

Studies indicate that carbon monoxide suffocation results in a disturbance of the blood supply of the brain. The Los Angeles doctors believe that part of the effect of procaine hydrochloride in carbon monoxide suffocation may be due to stimulation of the brain.

PENICILLIN SENSITIVITY WITHOUT CUTANEOUS MANIFESTATIONS

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The recent literature has contained many articles devoted to a study of penicillin sensitivity. Most of these have concerned themselves with cutaneous reactions. This most frequent manifestation of penicillin sensitivity has been studied exhaustively; the types of reactions have been classified and methods of desensitization worked out. The accompanying systemic symptoms, when present, have been those commonly associated with serum sickness and have consisted chiefly of chills, fever, headache and gastro-intestinal disturbances. It is assumed by most authors that these systemic symptoms are allergic phenomena.

We wish to present two unusual cases in which this allergic basis is not so obvious and in which there were no cutaneous lesions.

Case 1: S. W., a 21-year old married white woman, had her first attack of right upper quadrant pain in September, 1947. At that time she was 8 months pregnant. She delivered spontaneously at term, on October 20, 1947, and her postpartum course was uneventful. Since then she had frequent attacks of right upper quadrant pain which radiated to the back and which was accompanied by nausea and vomiting. These episodes usually lasted about 3 days. There was a questionable history of jaundice.

In February, 1948, she was admitted to another hospital while suffering from one of these attacks. Gallbladder x-rays taken at this time were reported as not showing any pathology.

She was admitted to Lakeview Hospital in April, 1948, with typical gallbladder colic. Gallbladder series taken 3 days after admission revealed the presence of many small stones. She was allowed to go home to take care of some personal affairs and on June 1, 1948, she returned for cholecystectomy. Her past history did not reveal any previous administration of penicillin.

Admission physical examination was negative except for soreness in the right upper quadrant and minimal left lower quadrant tenderness, which had been present since the patient's parturition. Laboratory work was negative. There was no clinical or laboratory evidence of jaundice.

On June 2, 1948, cholecystectomy and choledochostomy were performed. The gallbladder contained many small cholesterol stones and showed gross and microscopic evidence of chronic cholecystitis. The common duct was dilated and contained one small cholesterol stone.

The patient was given parenteral fluids with vitamin supplements post-operatively. Procaine penicillin 300,000 units daily was ordered. On the morning of the first post-operative day the temperature was 99° F., having risen to 99.2° F. during the night. There was enough nausea to necessitate the continued administration of parenteral fluids. On the second post-operative day the nausea was much more severe and the patient exhibited extreme lassitude. On the afternoon of the third post-operative day her temperature abruptly rose to 102° F. On the following day this elevation was maintained and that night the temperature rose to 103.2° F. The patient's marked drowsiness and lassitude persisted and became more severe. No etiology could be found. There was no upper respiratory infection. Chest plate was negative and there was no evidence of wound infection.

On the assumption that the fever was due to some concealed infection, the patient was placed on crystalline penicillin 100,000 units every 3 hours. The fever and lassitude continued unabated. It was not until the sixth post-operative day that the possibility of these symptoms being due to penicillin was considered.

An emergency white count was ordered and found to be within normal limits. All penicillin was discontinued. The response was dramatic. The patient's temperature returned to normal in less than 24 hours and remained normal thereafter. The disappearance of the lassitude and nausea corresponded to the drop in temperature and there were no further complications for the remainder of the patient's hospital course. She was discharged on the twelfth post-operative day on a regular diet.

At this time she presented a negative reaction to both the immediate and delayed intradermal cutaneous tests of penicillin sensitivity. The technique employed was that advocated by Peck[1] (1.2 mg. of crystalline penicillin G in .1 cc. of isotonic solution of sodium chloride).

When last interviewed, one year after operation, she was taking an unrestricted diet without any difficulty.

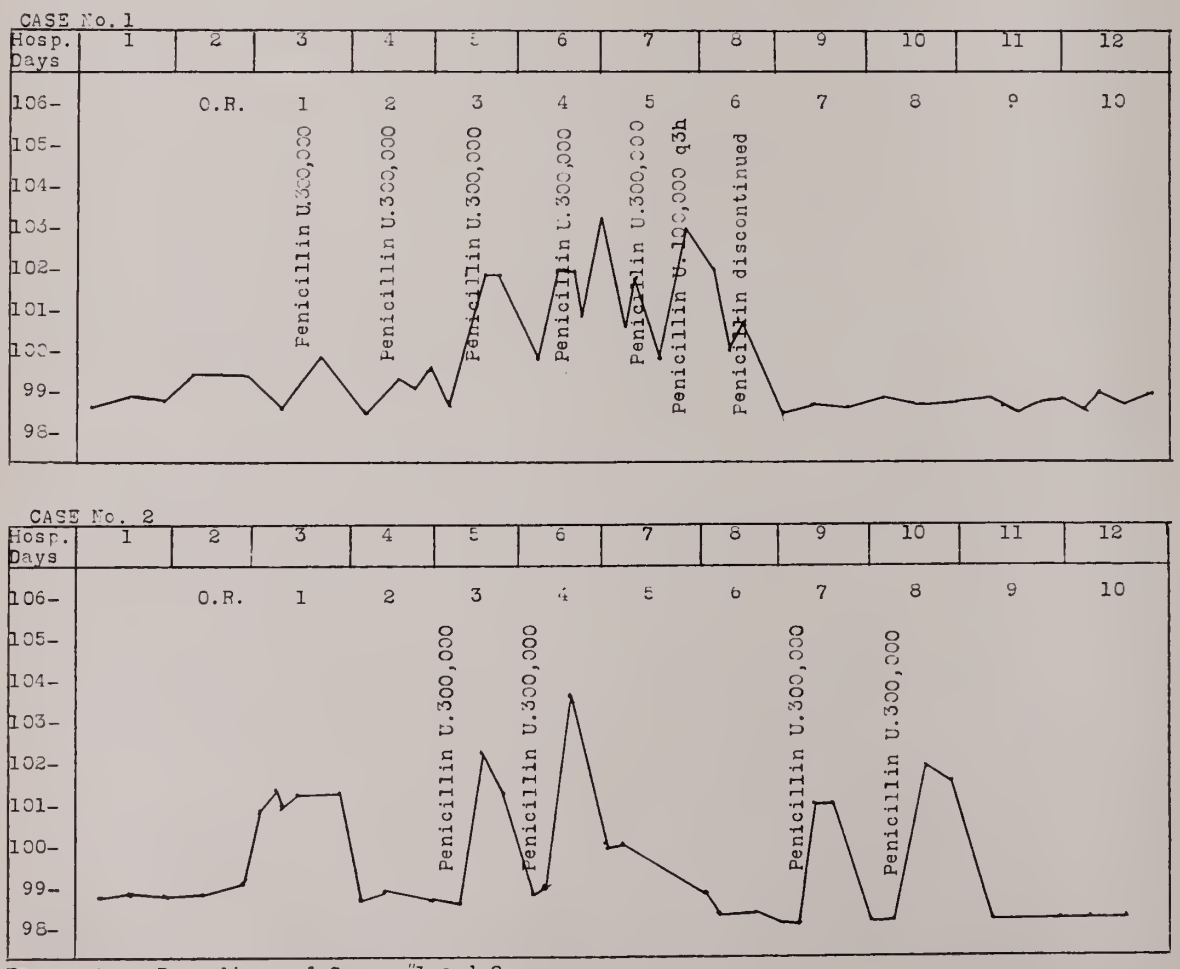
Discussion: This patient's reaction was of the immediate type, in that some symptoms of sensitivity (nausea and lassitude) appeared within 24 hours after administration of the first dose of penicillin. The similarity to a post-operative infection with fever appearing three and one-half days after operation is a remarkable coincidence. This similarity led to an increase in the penicillin dosage, which was followed by a corresponding increase in the severity of the symptoms. This case demonstrates the danger of the routine post-operative use of penicillin. It also demonstrated the advisability of ruling out penicillin sensitivity as soon as possible in all cases of post-operative fever, where the drug has been given.

A white blood count is an excellent aid when absence of cutaneous lesions make the diagnosis of febrile penicillin reactions difficult. It is interesting to note that in this instance there was no eosinophilia.

Case 2: A 42-year old married white woman, mother of 5 children, was referred to the hospital by Dr. Edward Joyner, of Suffolk, Va. Six months prior to admission she had received 3 courses of oral penicillin, each course consisting of 6 tablets of 50 milligrams each. This medication was employed in the treatment of upper respiratory infections.

She had suffered for about 12 years from symptoms suggestive of gallbladder disease and of late these symptoms had become more severe, to the point where she was having frequent attacks of incapacitating gallbladder colic.

Cholecystogram performed elsewhere a month before admission here revealed the presence of a poorly functioning gallbladder and stones. This patient



Temperature Recordings of Cases #1 and 2.

was an extremely nervous, apprehensive individual. Her mother had died after gallbladder surgery and she was afraid of a similar fate. This marked apprehension, which at times could be classified as panic, was often severe enough to make her afraid to visit her doctor's office. The severity and frequency of her attacks of gallbladder colic finally rendered her willing to submit to surgery, but did not alleviate her extreme apprehension concerning the procedure.

Physical examination on admission revealed an extremely nervous, apprehensive, middle-aged woman. Her temperature, pulse and respirations were not remarkable. Her blood pressure was 110 mg. systolic over 80 mg. diastolic. There was deep tenderness to palpation in her right upper quadrant. Laboratory work was negative.

On the morning of the second hospital day her breakfast was withheld and an infusion of 5% glucose in water was started. Enough sodium pentothal was added to this solution to render the patient semi-comatose and she was taken to the operating room where a G.O.E. anesthesia was substituted for the sodium pentothal solution. Cholecystectomy was performed and a thickened gallbladder, which evidenced many pericholecystic adhesions and which contained two large calcium bilirubin stones in its ampulla, was removed. The common duct was not remarkable and was not explored.

On the first post-operative day the patient was calm and her apprehension seemed to be greatly allayed. She did, however, present signs of early atelectasis as evidenced by right sided basal rales, diminished breath sounds and fever to 101.6° F. She was persuaded to sit up and forceful coughing was instituted. She brought up a large amount of sputum and subsequent to this her temperature returned to normal. It remained normal for the next 24 hours. Procaine penicillin—300,000 units—was given on the morning of the third post-operative day, and that afternoon her temperature spiked to 102.4° F. The next day she was given another 300,000 units of procaine penicillin and this was followed by another rise of temperature to 103.6° F. Both of these elevations were accompanied by severe psychic reactions of a paranoid nature. The patient became extremely fearful and apprehensive. She had frequent auditory hallucinations in which she was informed that the operation was going to be repeated and was threatened and upbraided in many ways. Clinical examination of the chest and of the wound did not reveal any etiology for the fever. Chest x-ray taken at this time was negative.

On the afternoon of the day of the second febrile reaction a blood count was performed and the white count and differential were found to be within normal limits. A diagnosis of penicillin sensitivity was made and the drug was discontinued. Subsequent to this her temperature returned to normal and her paranoia cleared up, though she remained a nervous, apprehensive woman. After 24 hours of normal temperature with no hallucinations or paranoid reactions, a test dose of 300,000 units of procaine penicillin was given. This was followed by a rise of temperature to 100.8° F. and a return of the auditory hallucinations and paranoid reactions described above.

On the following morning a second test dose was given and this was followed by a similar rise in temperature to 100.1° F. and a similar return of psychic symptoms. After this, penicillin was again discontinued and there was an immediate return to normal temperature and a rapid disappearance of the psychic symptoms. The patient was allowed to go home on the following day. Subsequent temperature readings at home remained normal and though the patient continued to be quite nervous and had to have sedation prescribed by her family physician, there was no return of the paranoid symptoms described above. Intradermal tests of penicillin sensitivity were negative.

Discussion: This patient presents another febrile reaction to penicillin without associated cutaneous manifestations. The symptomatology appeared shortly after administration of the drug. She also presented interesting psychic manifestations. Whether these latter symptoms were a reaction to penicillin *per se,* or simply the result of a febrile reaction in an already highly excited and apprehensive patient cannot be determined. It is interesting to note, however, that the initial febrile reaction which was due to atelectasis was not accompanied by any paranoia. Her psychic reaction bears a remarkable resemblance to those described by Kline and Highsmith,[2] who reported the only case of psychosis resulting from penicillin sensitivity that we have been able to find in the literature. Their patient had almost identical auditory hallucinations of a threatening nature.

These authors ascribed their patient's psychotic manifestations to "edematous lesions in her brain" similar to those associated with the accompanying severe urticaria and arthralgia. This explanation would not fit our case. It would, however, be possible for her to develop allergical lesions in her brain without manifesting similar skin lesions, just as the systemic symptoms of serum sickness need not be accompanied by skin lesions.

This case is also a reminder that it is advisable to rule out penicillin sensitivity in all cases of unexplained post-operative fever. Post-operative fever in the presence of a normal white count in a patient receiving penicillin is presumptive evidence of sensitivity to the drug. In this case also there was no eosinophilia.

SUMMARY

We have presented two cases which demonstrate that penicillin sensitivity need not be associated with cutaneous manifestations. The dangers of the routine post-operative use of penicillin are emphasized, and a toxic psychosis following the administration of the drug is described. In the second instance the fact that the fever and paranoid symptoms returned when treatment with the drug was resumed was strong evidence that penicillin was the etiologic agent.

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Attention!

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May we suggest that you review the ads in each issue of the MONTHLY and, when occasion arises to prescribe products featured or use the facilities offered, tell them you saw their ad in your Journal.

Warns of Danger in Industry From Beryllium.

Recent reports from doctors and other research workers emphasize danger of poisoning in industry from beryllium, Dr. C. M. Peterson, Chicago, secretary of the American Medical Association's Council on Industrial Medicine, said today.

Dr. Peterson cited articles in the April issue of *Archives of Industrial Hygiene and Occupational Medicine,* in which it is stated that exposure to beryllium, a metallic element, produces both a severe, acute lung disease which resembles pneumonia and a chronic form of lung disease with a fatality rate of from 10 to 35 per cent.

A report in this issue of the Archives by Dr. James K. Scott and Herbert E. Stokinger, Ph.D., Robert H. Hall, Ph.D., L. T. Steadman, Ph.D., Norman J. Ashenburg, M.S., and George F. Sprague, III, M.S., of Rochester, N. Y., concerning tests on animals reveals the high toxicity of beryllium.

"Not only is beryllium unquestionably a toxic agent but it is toxic in such small quantities as to be among the most toxic chemically of all elements yet investigated," this research group points out, adding:

"These amounts give rise to acute effects. It is reasonable to believe that still smaller quantities produce the chronic disease in human beings and that 'safe' levels of beryllium exposure ultimately may be set well below one microgram per cubic meter of air."

INVERSION OF THE UTERUS—REPORT OF A CASE

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This important obstetrical accident, inversion of the uterus, is quite rare, often seen only once or twice in the lifetime of an obstetrician. Since the first case was reported by de Vitry in 1847, less than a thousand cases have been reported. The incidence is about one in five thousand cases, according to recent authors,[2-4-5] in place of the former belief of one in one hundred thousand cases.[1] The incidence of recurrence in subsequent pregnancies has been estimated at about twenty-six per cent.

CLASSIFICATION

Inversion of the uterus has been classified by Phaneuf[6] as follows: Complete, in which the corpus passes through the cervical ring; or incomplete, where the fundus does not extend farther than the cervix. Also, this accident is acute, which occurs immediately postpartum before the cervical ring has formed; sub-acute, which is found after the cervical ring has formed; and chronic, which has existed a month or more postpartum and in which involution has taken place.

ETIOLOGY

It has been taught in medical schools that this condition occurs due to the mismanagement of the third stage of labor, to an adherent placenta, or to a pedunculated tumor, and is caused by undue pressure on the fundus, or traction on the cord. Others[7] believe that it occurs spontaneously due to the contraction of the muscle fibers of the fundus with relaxation of the lower uterine segment. It is felt that increased intra-abdominal pressure due to coughing or vomiting and the abnormal distribution of fibers in the fundus where the placenta was attached leads to the formation of a dimple on the fundus of the uterus. Phaneuf describes the mechanism as follows: "After any portion of the uterus becomes indented to a considerable extent, the rest of the organ seizes this invaginated portion as it would a foreign body, and in attempting to expel it, turns inside out". The role of oxytocics is cited by Kaltreider[7] who, in injecting ergotrate intravenously during a cesarean section, saw the uterus invert through the incision.

CAUSES[8]

Predisposing causes are as follows:

1. Pathological conditions of the uterus and its contents:
   a. Adherent placenta
   b. Short cord
   c. Congenital weakness or anomalies
   d. Weakening of the uterine wall at the placental attachment
   e. Congenital failure of improper innervation
   f. Chronic metritis
   g. Effects of difficult labor, frequent pregnancies, or abortions
   h. Fundal implantation of the placenta
   i. Tumors.
2. Functional conditions of the uterus:
   a. Inertia
   b. Relaxation of all parts of the uterus
   c. Disturbances of the contraction mechanism.

Exciting causes are as follows:

1. Manual removal of an adherent placenta
2. Increase in intra-abdominal pressure.
3. Mismanagement of the third stage of labor:
   a. Improper fundal pressure
   b. Traction on the cord
   c. Injudicious use of oxytocics.

SYMPTOMS

The chief symptoms are well known, *hemorrhage, pain, and shock,* the shock usually predominating. Shock is attributed to the stretching of the nerves in the broad ligaments and the peritoneum, which are caught in the inversion, and also to a compression of the ovaries. These theories are advanced since the shock is out of proportion to the hemorrhage. Differentiation from pedunculated tumors and uterine prolapse is usually simple.

TREATMENT

The inverted uterus has been treated by many methods. All agree that the urgent indications are

*Read before a joint meeting of the Smyth County-Washington County Medical Society, July, 1949.

control of hemorrhage and combating of shock. Early attempts to replace the uterus by taxis before recovery from shock are responsible for the large mortality. Some advise treatment of hemorrhage and infection, ignore the inversion, and treat the inversion when it has reached the chronic stage. Others, including the authors of most textbooks, advise immediate replacement before shock ensues.

The methods of replacement differ. Barrett[9] advises removing the placenta if adherent, and grasping the fundus in the palm of one hand and with the other hand replacing the uterus and to wait until the uterus contracts against the hand. O'Sullivan[10] describes a method of using intravaginal hydraulic pressure with a douche nozzle. Irving[11] recommends the Huntington operation be done without attempting vaginal manipulation. This operation replaces the uterus in its proper position through an abdominal incision. Reposition from within the abdomen is accomplished with relative ease, with a minimum of risk, and with very satisfactory permanent results. This operation is performed as soon as possible after the hemorrhage is controlled and the patient is recovering from shock. Blood and plasma are essential. The procedure consists of abdominal section and replacement by traction with repeated grasps of Allis forceps, the last inverted portion of the uterus being replaced first. There is no vaginal manipulation and suturing of the restored uterus is not necessary. This operation is advised only in the first forty-eight hours. Irving reports seven consecutive cases of acute inversion without a mortality.

Subacute inversion, occurring shortly after the accident, requires judgment, as the majority of deaths occur in this stage. Some believe that it is best to be conservative and treat hemorrhage, shock, and await involution of the uterus. Mortality[8] of conservative treatment is five per cent as opposed to a thirty per cent mortality when interference is attempted in this stage.

The chronic inverted uterus is replaced by several methods, some antiquated and some new. Attempts to reinvert the uterus from below with gauze packs, cup-shaped repositors, abdominal operation as suggested by Haultain, and vaginal operations as advocated by Spinelli, are all used.

MORTALITY

The mortality of this accident is high, from fourteen to twenty-five per cent. Half the deaths occurred in the first hour, and nine-tenths occurred within the first two hours. Later results (Phaneuf) show a mortality of between five and ten per cent, due to the immediate treatment of hemorrhage and shock and the use of the Huntington operation.

CASE REPORT

Case 1. (H. L. F., #65475) An 18 year old white primipara, admitted to the Johnston Memorial Hospital in active labor on April 14, 1949, at 9:30 P.M. History was entirely negative and her prenatal course was normal. No difficulties were expected. Labor was uneventful, but rapid, the first and second stage of labor lasting but seven hours. Nitrous oxide was given with her pains and ether at the time of delivery. A living male infant was delivered at 4 A.M., weighing seven pounds. The placenta was allowed to separate spontaneously and was delivered eleven minutes later. A moderate amount of bleeding occurred, which was controlled with fundal massage, pituitrin 1 cc., and ergotrate gr. 1/320 intravenously. The patient was returned to her room with minimal bleeding and the uterus firm. At 5 A.M. the patient, after vomiting, noticed gushes of blood. Suddenly at 6:15 A.M. the patient went into shock. She received 1,000 cc. of blood, three units of plasma, and oxygen, in conjunction with routine shock therapy. The diagnosis of uterine inversion was made by the attending obstetrician and efforts were made to reposit the uterus vaginally, but to no avail. Examination of the patient revealed her blood pressure to be 40/0, pulse 136, weak and thready. She slowly improved under treatment and when her shock was improved another attempt at vaginal reposition failed. Since the patient was in fair condition it was deemed advisable to attempt reposition by the abdominal route. At 8:25 A.M. a Huntington operation was performed under a minimal amount of ether anesthesia. The abdomen was opened under a low midline incision and the uterus was seen completely inverted. The adnexa on each side was grasped with Allis forceps and by means of traction and gentle kneading, the uterus was reposited. Pituitrin, 1 cc., was injected directly into the uterus, which contracted nicely. The abdomen was closed in the usual manner and the patient's condition was seen to improve immediately.

Then the patient was placed in the lithotomy position and prepared with merthiolate. The uterus and vagina were then packed. The entire procedure took less than twenty minutes and the patient responded well, her pressure rising rapidly to 110/60 and her pulse dropping to 100.

She was placed on large doses of penicillin, another 1,000 cc. of blood given, and her postoperative course was normal. Temperature rise was to a maximum of 100 degrees for two days, then returned to normal. No further bleeding occurred. The packing was removed on the third postoperative day and she was discharged on April 23, 1949, in good condition.

SUMMARY

Inversion of the uterus is best treated by early replacement of the uterus either by the abdominal or vaginal method after shock and hemorrhage have been controlled.

More stress should be placed on the use of oxytocics, vomiting, and a predisposition to inversion, than on mismanagement of the third stage of labor.

Newer methods of treatment, chemotherapy, transfusions, and immediate replacement of the uterus have lowered the mortality of this accident to between five and ten per cent.

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New Books.

The following are among books recently received by the Medical College of Virginia Library which are available to our readers under usual library rules:

Best and Taylor—Physiological basis of medical practice. 5th ed.
Burch and Reaser—A primer of cardiology.
Current therapy. 1950.
Dubos—Louis Pasteur, Free lance of science.
Felter, West and Zetzsche—Surgical nursing. 5th ed.
Florey—Antibiotics.
Hawley and Cardon—The art and science of nutrition. 3rd ed.
McLester—Nutrition and diet in health and disease. 5th ed.
Marriott—Water and salt depletion.
Pearson—Emotional disorders of Children.
Salter—Chemical developments in thyroidology.

Exposure to Carbon Tetrachloride Fumes May Cause Blindness.

Three cases of blindness developing in industrial workers exposed to the fumes of carbon tetrachloride are reported in the March 1950 *Archives of Industrial Hygiene and Occupational Medicine.*

One man was employed in a plant making automatic razors, another as an electrician in an aluminum extraction plant, and a woman in a dress manufacturing establishment, according to Dr. Adelaide Ross Smith of the Division of Industrial Hygiene and Safety Standards of the New York State Department of Labor, New York. She states that in one patient, visual defects cleared almost completely after about a month of treatment, but in the remaining two only some sight had returned four and seven years after exposure.

COLD HEMAGGLUTINATION AND OTHER STUDIES IN MULTIPLE SCLEROSIS*

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Recently attention has been directed to the study of blood in multiple sclerosis. Putnam[1] has suggested an abnormality of the clotting mechanism. Simon[2] has demonstrated an increased coagulability following the intravenous injection of typhoid vaccine or the subcutaneous injection of epinephrine. This increase of coagulability was 3 times more prolonged in the multiple sclerosis group than in the control group.

Because of the frequency of exacerbations of symptoms of multiple sclerosis following undue exposure of the patient to cold, it was felt that a controlled study of cold hemagglutination would be interesting. Coagulation time and prothrombine time determinations have also been done and are reported. Three groups of patients are included in this study. None of the patients reported had a history of virus pneumonia within the 18 months prior to the blood studies.

Group 1 consisted of 8 patients having a diagnosis of multiple sclerosis. One case was considered chronic and progressive without clear cut remissions and exacerbations. One case was studied on the first day of an exacerbation of symptoms. The remainder of the cases were considered to be in remission. All patients have been observed sufficiently long for the diagnosis to be beyond reasonable doubt.

Group 2 consisted of 9 patients having neurological illnesses other than multiple sclerosis. Included in this group were the following diagnoses: unclassified degenerative disease of the central nervous system (3), hemangioma of the cerebellum, amyotrophic lateral sclerosis (2), encephalomalacia of the left side of the brain due to trauma, Froelich's syndrome, and polyradiculoneuronitis.

Group 3 consisted of 7 patients without evidence of neurological disease. Most of the patients had a psychiatric diagnosis.

COLD HEMAGGLUTINATION

The technique of the hemagglutination test of Kettel as quoted by Stats and Wasserman[3] was utilized. Serum dilutions of 1:10 through 1:2560 were used. Readings were made at 4, 10, 15, 22, 30 and 37 degrees centigrade. The tubes were examined macroscopically only.

No agglutination was observed in groups 1 or 2. There was one "plus-minus" reading in 1:10 dilution at 4 degrees centigrade from a patient of group 3 having a diagnosis of anxiety reaction.

COAGULATION TIME

Coagulation time was determined, using the Lee and White method, 5-8 minutes being considered normal.

Coagulation time of the group 1 multiple sclerosis patients varied between 3 minutes 30 seconds and 7 minutes, with an average of 4 minutes 56 seconds.

The coagulation time of the group 2 patients having other neurological diseases varied between 4 minutes 30 seconds and 7 minutes 15 seconds, with an average of 4 minutes 45 seconds.

The coagulation time of the group 3 control patients varied between 2 minutes 15 seconds and 6 minutes 30 seconds with an average of 4 minutes 32 seconds.

From these figures it is noted that there were no significant changes in the coagulation time in any of the three groups.

PROTHROMBIN TIME

Prothrombin activity was estimated by the Quick method and reported in percentage, 50 per cent and above being within the normal range.

Prothrombin activity in the multiple sclerosis

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group ranged from 50 to 100 per cent, with an average of 70 per cent.

Prothrombin activity in the group having other neurological diseases ranged between 19 per cent and 75 per cent, with an average of 35.4 per cent.

Prothrombin activity in the control group ranged from 34 per cent to 75 per cent, with an average of 51.1 per cent.

The average prothrombin time of the multiple sclerosis patients and controls was within normal limits, while that of the miscellaneous neurological disease group was significantly below normal.

SUMMARY

Cold agglutination tests, coagulation time, and prothrombin time estimations were performed on a small group of patients having multiple sclerosis. Several stages of the disease were represented. Similar tests were done on a group of patients having diagnoses of miscellaneous neurological diseases other than multiple sclerosis and also on a control group without neurological disease. No abnormal titer of cold agglutinins was found in any group. The coagulation time of the patients having multiple sclerosis was approximately the same as that for the other two groups. Average prothrombin activity of the multiple sclerosis and control groups was within normal limits. It was below normal in the group of other neurological conditions.

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Two Antihistaminic Drugs Fail in Controlled Test Against Colds.

As a cure for the common cold, two antihistaminic drugs taken within 24 hours after the onset of symptoms are no better than placebos. This is the conclusion of a group of U. S. Army Medical Corps officers who made a controlled study of the drugs (tripelennamine hydrochloride and chlorothen citrate) at West Point.

An effort was made to ascertain whether patients receiving medicaments early in the course of their illness were more likely to be cured than those starting treatment later.

"Patients who began treatment within 24 hours after the onset of a head cold were about as likely to be among those reporting no help as among the group reporting cures," the researchers say. (*J.A.M.A.*, May 13.) They added: "This was approximately equally true of patients receiving all forms of treatment [including placebos]." The antihistaminic drugs appear, however, to lessen nasal discharge.

There has been a paucity of controlled studies of the effects of antihistaminic drugs on the common cold, the authors point out. Any form of treatment of the common cold is influenced by so many factors that only a controlled study provides results on which valid conclusions can be based.

The West Point study made by Lieut. Col. R. J. Hoagland, Capt. E. N. Deitz, Lieut. P. W. Myers and Lieut. H. C. Cosei and, included 190 patients, all healthy young men in the military service. Medical attention was given before duties were begun, eliminating the temptation to report to sick call to avoid duties. Physicians prescribing treatment and making the follow-up examinations 72 hours after treatment was begun were unaware of what medicines the patients were receiving.

A CASE OF POST-TRAUMATIC PARKINSONISM TREATED WITH MYANESIN*

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A review of the literature reveals a comparative dearth of authentic case reports of post-traumatic Parkinsonism and considerable controversy with regard to cranial injury as an etiological factor in this condition. A few case reports of this condition appear in the literature citing peripheral nerve trauma as an etiological factor and electrical injury[1], which have led to additional controversial opinions.

Observers of reported cases[4] have agreed that the following criteria must be present to establish a diagnosis of this disease entity: (1) Trauma must be severe enough to be able to cause some cranial lesion; (2) The patient who suffered from trauma must not have been a previous subject to peripheral symptoms; (3) The disease process must not follow the trauma immediately, but its development ought to be preceded by some prodromal cerebral symptoms which would then develop a characteristic clinical picture; (4) The interval between trauma and the onset of Parkinsonism must be neither too short nor too long; and (5) From the time of traumatism and the development of organic symptoms, the course of the disease must be uninterrupted.

The similarity of the clinical syndrome of Parkinsonism following encephalitis lethargica and that following cerebral trauma can hardly be ignored nor can it be attributed to coincidence. The pathogenesis of post-encephalitic Parkinsonism has been established as due to lesions in the basal ganglia and the midbrain areas. It is reasonable to assume that petechial hemorrhages, though not demonstrable following head injury, occur in the extrapyramidal system producing the same clinical picture.

REPORT OF A CASE

Mr. H. K. G., a veteran of World War II, was referred to our Clinic for treatment of a condition which had been previously diagnosed as hysteria. A review of the Army medical records showed that this veteran was involved in a vehicular accident on December 17, 1944, and two hours later was given medical attention at a battalion aid station where the diagnoses of deep laceration of the scalp; fracture, dislocation, compound, middle finger, left hand; and laceration, deep, upper third, right leg, were made. He was treated for these conditions and on December 25, 1944, was transferred to a general hospital for continued treatment. During these periods of hospitalization, there is no record nor any history of an infectious process nor any history of an attack of influenza. He remained as a convalescent patient until his discharge to duty on April 20, 1945, four months after injury, at which time there was noted a "weakness of the grip, left hand, with an intermittent tremor of the fingers which could be controlled to a certain extent voluntarily." He did not seek nor receive any medical attention from the time of his discharge in November of 1945 up until the early part of 1948 when he was seen on an outpatient basis at the University of Virginia, Charlottesville, Virginia, where a diagnosis of early Parkinsonism was suspected and rabellon prescribed.

At the time he was first seen at our Clinic in the spring of 1948, the writer was struck by the clinical picture presented. There was a spastic gait on the left with dragging of the left lower extremity. The left upper extremity was held in a semi-flexed position rigidly at the side with a pronounced tremor of the left hand and forearm, and typical pill-rolling movements of the fingers of that hand. The facies were masked and there was increased salivation with periodic drooling. There was a suggestion, but not typical, of a festinating gait when the veteran was asked to walk at a rapid pace. Examination revealed rigidity of the lower extremity and typical cogwheel rigidity was elicited in the upper extremity. A sample of the patient's handwriting, which was typical of that seen in Parkinsonism with considerable tremor and elision, was obtained and recorded.

This individual was, and is, employed by a large department store in the South as a supervisor of the men's clothing department. Of necessity this caused

*Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

him to come in contact with a number of employees whom he supervised, in addition to a large number of customers and clients. This caused the patient considerable concern and he became extremely self-conscious about his condition.

The veteran was placed on myanesin therapy in the form of Tolserol(R) (0.25 gm.), four tablets three times a day for a total daily dosage of three grams, and requested to report to this Clinic once weekly for a determination of progress. After one week of treatment, although the improvement was not dramatic, it was indeed remarkable. He was continued on this form of treatment with the dosage as stated and the following criteria were used to denote progress and/or improvement; (a) The patient's subjective symptoms and attitudes; (b) The reactions of his friends, relatives and employees; (c) Posture and gait; (d) Status of muscle groups of the involved extremities; (e) Extent and excursion of tremors and pill-rolling movements; (f) Emotional mobility of the facial muscles; (g) Amount of salivation; and (h) Serial handwriting samples.

After approximately three months of therapy, the veteran reported that the stiffness of his extremities had considerably diminished, he no longer walked with a dragging gait, his relatives, friends and employees complimented him on the marked change in his condition and general appearance, he was no longer self-conscious, and people on the street did not stare at him as previously. The veteran walked in an almost erect position with only slight spasticity on the left and the tremors of the left hand were reduced to a minimum. The increased salivation was practically eliminated and the veteran's facial expression became emotionally mobile so that his facies assumed a normal appearance. The serial samples of handwriting unquestionably demonstrated an improvement with elimination of the Parkinsonism tremor with only an occasional elision.

SUMMARY AND CONCLUSIONS

1. A case of post-traumatic Parkinsonism due to head injury is presented.
2. The similarity of this syndrome to that following encephalitis lethargica cannot be questioned.
3. The absence of any record or history of an acute infectious process or influenza eliminates post-encephalitis as a result of encephalitis lethargica.
4. The criteria suggested as diagnostic of this condition have been met.
5. It is felt that the production of this type of clinical picture is due to petechial hemorrhages in the corpus striatum and substantia nigra.
6. The extent to which the peripheral injury to the hand contributed to the development of the syndrome cannot be determined at this time, but it probably played some part.
7. Myanesin is of definite value in the treatment of this condition.

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CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: B-65550

A 17 year old colored female entered St. Philip Hospital because of shortness of breath and swelling of her ankles. She had apparently been in good health until two years before admission when she developed swollen ankles during the 7th month of her first pregnancy. She was put to bed by her physician and given large white tablets (sulfa?). In a few days her symptoms disappeared and she apparently had an otherwise uneventful pregnancy. She then remained well until two months before admission when she again developed swelling of the ankles and abdomen accompanied by shortness of breath on exertion. She had no orthopnea, however, and stated that she slept well. She was again put at bed rest and given several medications, but apparently did not improve significantly and was referred to the hospital.

During the two months prior to admission the patient had had anorexia with some nausea and vomiting and occasional headaches. She denied having had any joint pain, epistaxis or night sweats during her present illness or at any time in the past. Her last menstrual period had occurred three months prior to admission.

PHYSICAL EXAMINATION: Temperature 99°, pulse 116, respiration 16 and blood pressure 124/78. The patient was well developed and well nourished and in no acute distress, lying flat in bed. The skin and mucous membranes appeared normal without eruptions or petechiae. The teeth were in excellent condition; the tonsils were hypertrophied, cryptic and injected with a thin grayish secretion over the tonsils and the posterior pharyngeal wall. The breath was described as foul. The submaxillary glands were enlarged bilaterally. There was mild neck vein distention. The chest appeared symmetrical and expanded normally. The left lung was clear. On the right posteriorly and laterally there was flatness to percussion with diminished breath sounds and fremitus below the level of the 6th rib. No rales were heard. The apex impulse was located in the 7th intercostal space 14 cm. from the mid sternal line. There was a systolic thrill and a harsh blowing systolic murmur at the apex. In addition one observer detected a harsh systolic murmur in the 3rd left intercostal space with a questionable systolic thrill in this same area and another observer detected a diastolic apical murmur. All were agreed that a gallop rhythm was present. The abdomen was ovoid with "probable ascites". The liver was enlarged to the umbilicus and non-tender. There was 2+ pitting edema of the ankles. Pelvic and rectal examinations were negative, though the uterus was not palpated.

LABORATORY DATA: Voided urine, acid, specific gravity 1.017, trace of albumin, 50-75 WBC, 1-2 RBC and an occasional granular cast per h.p.f. Three days later a catheterized specimen showed a specific gravity of 1.003 and 0-3 WBC per h.p.f. Hemoglobin was 14 grams, red blood count 6,120,000, white blood count 7,700, 52 polys, 45 lymphs, 1 basophil and 2 monos, with considerable variation in size and shape of the RBC. Total proteins were 5.3, albumin 2.6, globulin 2.7. Flocculation was negative. A chest plate revealed generalized cardiac enlargement with a cardiothoracic ratio of 62% and density in the right lung base compatible with fluid. An electrocardiogram: Rate 115 per minute, rhythm regular. The P-R interval was 0.19 and Q-S 0.09; Lead I—small R, deep slurred S; Lead II—moderate R, moderate slurred S; Lead III—slurred R, diphasic T; Lead IV and Lead V—moderate R, moderate S, diphasic T. The sedimentation rate was 4 mm. in one hour, the NPN 27 mgm. %, and the blood sugar 128 mgm. %.

Following admission the patient was placed at bed rest, given a low salt diet and salyrgan intravenously. Digitoxin, 1.4 mgm., was administered in divided doses over a 24 hour period and continued at 0.2 mgm. every morning. Thoracentesis on the day following admission yielded 1,200 cc. of dark straw-colored fluid with 370 cells per cubic mm., 61 lymphs, 9 polys and 30 endothelial cells. Specific gravity 1.012. Another 1,000 cc. of a similar fluid was obtained the following day. Fluoroscopy following removal of the fluid showed generalized

cardiac enlargement with good cardiac pulsations. By the third hospital day the patient was apparently asymptomatic while at rest. The temperature remained normal, the pulse varied between 80 and 100, the respirations from 20-24. The pleural effusion gradually returned. Digitoxin was discontinued on the 7th hospital day and on the following day aspirin, 15 grains every four hours, was started. The patient remained in essentially the same condition and offered no complaints until early in the morning of the 14th hospital day when she suddenly became quite restless and complained of pain all over her body. The pulse was noted by the nurse to be rapid and weak, the respirations were rapid and shallow and the blood pressure was recorded as 120/100. She was given 100 mgm. of demerol at 3:45 A. M. and became quieter. At 8:00 A. M. the patient was found to be comatose with cold clammy skin. Reflexes were normal. She was given 1,000 cc. of 5% glucose in saline and appeared to respond somewhat in that she regained consciousness, but she was unable to give any history. One hour later she again lapsed into coma and died.

ADDITIONAL STUDIES: Numerous blood cultures were reported as negative, but one culture was reported as non-hemolytic streptococcus. Smears and cultures of the pleural fluid were reported as negative for Tbc and other organisms. A repeat electrocardiogram on the sixth hospital day showed: Rate 95, rhythm regular, P-R 0.22, Q-S 0.08; Lead I—low R, deep S; Lead II—Broad P, moderate R, deep S; Lead III—low notched R, negative T; CR_1—wide notched QRS, negative T, CR_4 and CR_5—High R, diphasic T. Axis plus 120. A repeat blood count on the seventh hospital day was as follows: RBC 5,160,000, WBC 8,550, hemoglobin 12.5 grams, differential essentially unchanged.

DISCUSSION BY DR. HOWARD M. MCCUE, JR.*

I will presume that all of you received a copy of the protocol and, therefore, I will dispense with reading it through and will proceed to discuss the case as we go along.

This was a seventeen year old colored girl admitted to the hospital with the chief complaint of dyspnea and edema. Dyspnea can be either cardiac or pulmonary in origin or can have other causes. However, when dyspnea is associated with dependent edema it certainly suggests congestive heart failure and I would presume that this dyspnea was on a cardiac basis. We see in the history that when pregnant two years previous, she had swelling of her ankles during the seventh month of pregnancy. She was given some white pills at this time and the presumption is that they might have been one of the sulfonamides. I do not think we can draw any definite conclusion from this, as we do not know what the medication was and we do not know any of the other clinical findings at that time. It has been well established that the blood volume is largest in the seventh month of pregnancy and this is the one time, other than at the time of delivery, that congestive failure is most likely to develop in pregnant cardiacs; and my only suggestion would be that she might have had some heart failure at that time. Two months prior to admission, she again developed ankle edema, swelling of the abdomen and dyspnea on exertion. The exertional dyspnea would certainly seem to be cardiac in origin. The only other thing I think our attention should be directed to is the presence of fairly marked edema and the absence of orthopnea and this brings to mind the possibility of the edema being on some other basis such as portal obstruction. We, also, have the additional symptoms of anorexia, nausea and vomiting which should direct our attention to the gastro-intestinal tract and, of course, we must include with the gastro-intestinal tract the possibility of liver disease.

On admission to the hospital, physical examination showed tachycardia, without rapid respiration. This is certainly unusual for ordinary congestive heart failure. Tonsils and pharynx were covered by a grey secretion. No other details are given, except that the patient had foul breath. I would presume that this is an ordinary throat infection, probably an ordinary tonsilitis but, we must remember the possibility of diphtheria. Sub-maxillary glands were enlarged. The point is not clearly stated but I would presume that this means lymph glands and not salivary glands. I would presume that this was the lymphadenopathy associated with the throat infection. There was increased venous pressure as shown by the neck vein distention and there were signs of fluid in the right chest. In the examination of the heart there was marked enlargement, a harsh blowing systolic murmur (this is a hard combination to accept, the murmur being both harsh and blow-

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ing). The murmur was associated with a palpable thrill at the apex. One observer is reported to have heard a diastolic murmur at the apex and another observer described a systolic murmur and thrill in the third left intercostal space. A gallop rhythm was present. Obviously auscultation of the heart is a matter of opinion. Since we cannot listen to the heart in this case, we must accept the description of others and try to make our deductions from this. I would presume that there was a loud, harsh systolic murmur at the apex associated with a thrill. The presence of a diastolic murmur at the apex is apparently questionable and although I admit that the murmur of mitral stenosis is one of the most difficult to hear, since it was heard by only one observer, I believe we must discount this finding. In the presence of a loud, harsh apical systolic murmur, I do not feel that an examiner could distinguish clearly that there was a separate or second harsh systolic murmur at the third left intercostal space. It would be more a decision as to the point at which the murmur is loudest and the consensus of opinion seems to have been the apex. After interpreting these findings they are indicative of organic changes in the mitral valve, mitral insufficiency with regurgitation. The diagnosis of mitral stenosis in such a case would depend almost entirely on the presence or the absence of the characteristic mid or late diastolic murmur since marked mitral insufficiency might produce the same cardiac changes as regards cardiac outline, electrocardiographic pattern, etc. I choose to disregard the questionable diastolic murmur and conclude that only mitral insufficiency was present. The gallop rhythm present with this rapid rate would certainly lead me to believe there was myocardial change. In the abdomen the liver was markedly enlarged and there was questionable ascites. It is stated that the pelvic examination was negative, except that the uterus was not felt. The presence of ascites would prevent the successful palpation of the uterus. I suppose we should mention here the possibility of Meigs' Syndrome which would be a tumor of the ovary with unilateral pleural effusion. However, I should regard this as most unlikely in a patient aged seventeen. There was a moderate amount of dependent edema of the ankles.

The laboratory data revealed that the urine was more or less non-contributory. Blood showed polycythemia with aniso and poikilocytosis and without leucocytosis. A sickle cell preparation was negative. I believe the abnormality of the blood cells is of some interest. I doubt that it can be explained entirely on the basis of heart failure. Serum proteins were quite low, the albumin being the lowest and with a reversal of the A G ratio. I believe this is, also, of some interest and in association with the blood changes found, directs our attention to the possibility of liver disease. Chest X-ray study showed marked enlargement of the heart and fluid at the right base.

The electrocardiogram is reported as showing tachycardia with regular rhythm and findings compatible with right axis deviation. I think it would be better if we take a look at these tracings. I believe they are available and I wonder if we might have them projected on the screen. In this first tracing we have obvious tachycardia at a rate of about 115. P-R .19 sec. QRS .11 sec. Lead I—Low R. Deep S. QRS is upright in Lead II and III. In chest leads there is relatively high R in V-1 with a small S and moderate R and moderate S in V-4 and V-5. These changes are compatible with both right ventricular hypertrophy and strain or incomplete bundle branch block. It is impossible to differentiate in an electrocardiographic pattern between right ventricular strain and incomplete right bundle branch block. The second electrocardiogram has a regular rhythm, rate approximately 95. P-R .22 sec. QRS .11 sec. No essential change from the previous tracing except the P-R is obviously prolonged. The sedimentation rate is reported as normal. I think this finding is of some interest, as is the normal white count. Fasting blood sugar is reported as 128. I believe this is a little higher than normal. I believe this is a finding of some interest in that it again draws my attention to the liver NPN which was normal.

Her course in the hospital was apparently not too eventful. Thoracentesis was done on two occasions. 1,200 cc. and 1,000 cc. were removed. Specific gravity being 1.012 would make this transudate, as the specific gravity is less than 1.017. An exudate would have a specific gravity of 1.018 or better. Following the removal of fluid, fluoroscopic examination showed good cardiac pulsation. It was their opinion that there was no pericardial effusion. Digitoxin was given and apparently had very little effect and so on the eighth day aspirin in fairly large doses was started. Patient was apparently getting along reasonably well, still having no orthopnea and very lit-

tle respiratory distress until the fourteenth day, at which time she became quite restless and complained of pain all over. It is very difficult for me to explain this widespread pain, unless it be of a central origin. I think the restlessness might well be on a central nervous system basis. She was reported as being stuporous, cold and clammy with weak pulse and shallow respiration but her blood pressure was 120/100. She was given 1,000 cc. of glucose and saline and roused up out of the coma to some extent but shortly thereafter succumbed. This would certainly not be characteristic of a cardiac death. In the first place, a patient who was comatose, cold and clammy from cardiac failure would certainly not have a blood pressure of 120/100. In fact she would perhaps have no blood pressure that could be determined by the usual instrument, and the administration of 1,000 cc. of glucose and saline intravenously would probably do no more than precipitate pulmonary edema or at least make the situation worse whereas in this case it seemed to revive her for a short period. We have the additional laboratory study of one blood culture out of many reported negative showing a non-hemolytic strep. I would feel that this was almost certainly a contaminant and probably has no particular significance in the case.

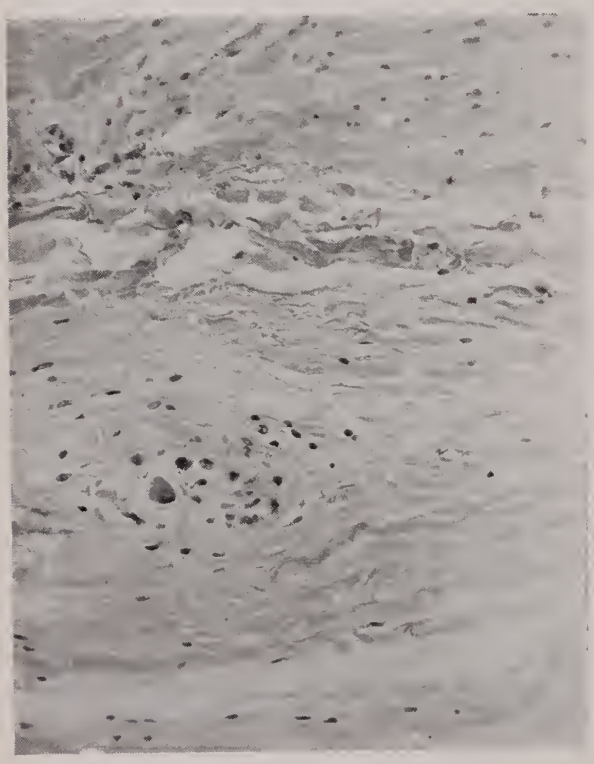
To review the situation, we could consider diphtheria with diphtheric myocarditis. No cultures from the throat are reported but I cannot conceive of diphtheria producing the described murmur and I consider this an unlikely diagnosis. You might consider sarcoidosis. However, there was lymphadenopathy limited only to the neck, the spleen was not enlarged and the course of the disease is generally very chronic and not such as is reported here. We might consider one of the collagen group of diseases of which the most likely would probably be disseminated lupus. She did not have leukopenia, there were no skin lesions and although the murmur might be explained on the basis of Liebman-Sachs endocarditis, I do not believe that this is a tenable diagnosis. Congenital heart disease should be considered. However, the murmur and thrill being localized primarily at the apex in association with right axis deviation and right ventricular strain on the electrocardiogram would be inconsistent as pulmonic stenosis or auricular septal defect, tetralogy of Fallot or Eisenmenger's complex do not produce an apical systolic murmur but rather a para-sternal murmur. The fluoroscopic findings are inconsistent with tetralogy and I do not believe we are dealing with a congenital defect in this case. I have excluded sub-acute bacterial endocarditis on the basis of negative blood cultures; also there was no leukocytosis and very little fever. Cardiac cirrhosis is a consideration but this condition is really quite uncommon and usually develops only after a long-standing congestive heart failure, not measured in weeks. To conclude, I believe that this patient had acute tonsillitis with a recurrence of rheumatic fever, that she had rheumatic heart disease with mitral insufficiency and an exacerbation of active rheumatic carditis. The absence of leukocytosis and a normal sedimentation rate are unusual for such a condition but not unknown. We have seen cases develop rheumatic carditis go down hill and die without ever developing anemia, leukocytosis or an elevated sedimentation rate, and I do not believe that excludes the diagnosis of active rheumatic carditis. It is almost unknown to see a young person of this age with rheumatic heart disease develop congestive heart failure except during active carditis irregardless of the valve lesion. For that reason I feel sure that active rheumatic infection was present. However, there is considerable doubt in my mind as to whether this patient died a cardiac death. It certainly was a very unusual one if she did die of congestive failure and because of the changes in the red blood cells, the elevated fasting blood sugar, the low serum proteins with reversal of the A G ratio and the history of repeated anorexia, nausea and vomiting; I believe that this woman had hepatic vein thrombosis and that she died a toxic death, most likely due to liver failure and possibly contributed to by the salicylates. A liver death would certainly explain the coma, the cold, clammy skin, weak pulse, etc., and the presence of a measurable blood pressure and, also the fact that she was somewhat revived by intravenous glucose rather than pushed over the brink. It is my feeling that although she had rheumatic carditis and heart failure, she probably succumbed to the liver changes.

HOSPITAL DIAGNOSIS: (1) Rheumatic heart disease with pleural effusion (2) Mitral valvulitis (3) Congestive failure.

DR. MCCUE'S DIAGNOSIS: (1) Rheumatic heart disease with active rheumatic carditis (2) Mitral insufficiency (3) Congestive heart failure (4) Liver insufficiency.

PATHOLOGICAL REPORT: DR. W. H. TALBOT*

The heart weighed 530 gms. and showed some hypertrophy with dilatation of the ventricles. The circumferences of the valves were: tricuspid 13. Ocm. pulmonary 8.1 cm., mitral 14 cm. (admitted 3 fingers easily) and aortic 7.0 cm. The leaflets of the mitral and aortic valves were moderately thickened throughout and the chordae tendinae of the mitral valve were thickened with some loss of webbing. The endocardium of the left atrium, in some places was thickened, white, opaque and corrugated. Microscopically, Aschoff nodules were found throughout the myocardium. The endocardium of the left

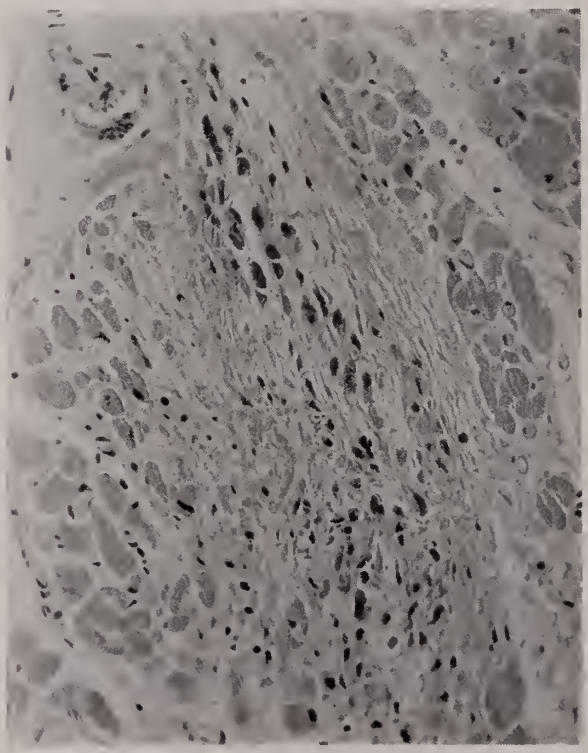


Microscopic view of section of aorta showing Aschoff modules in adventitia.

atrium was thickened, vascularized and infiltrated by mononuclear cells. A section from the adjacent aorta showed an Aschoff nodule in the adventitia. The changes just described are indicative of an active rheumatic carditis, superimposed on a previous healed rheumatic endocarditis.

The right pleural cavity contained 1,500 cc. of a clear, slightly sanguineous fluid. The lungs were increased in weight (1035 gms.) and showed in different areas edema, intra-alveolar hemorrhages and atelectasis.

Section through heart showing evidence of previous rheumatic disease of mitral valve and endocardium of left auricle.



Microscopic view of section of myocardium showing active rheumatic disease (Aschoff nodule).

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The liver showed severe chronic passive congestion with central necrosis. No thrombi were present in either the intrahepatic or extra hepatic portions of the portal veins. Four hundred cc. of a clear amber fluid was present in the peritoneal cavity.

Other interesting findings were the gross and microscopic picture of the tonsils which showed acute tonsillitis with erosion.

PATHOLOGICAL DIAGNOSIS:

1. Active rheumatic heart disease superimposed on a previous healed rheumatic endocarditis.
2. Pulmonary Congestion and edema with focal intra-alveolar hemorrhage and atelectasis, bilateral.
3. Pleural effusion, right (1,450 cc.) and peritoneal effusion (400 cc).
4. Chronic passive congestion of liver with central necrosis, severe.
5. Acute tonsillitis with superficial erosion.

Find Chloromycetin Effective Against Tularemia.

Successful treatment of six cases of tularemia, also known as rabbit fever, with chloromycetin, one of the newer antibiotic drugs, is reported by a group of doctors from the University of Maryland School of Medicine, Baltimore—Robert T. Parker, Robert E. Bauer, Howard E. Hall and Theodore E. Woodward, and Leonard M. Lister, a medical Student, *J.A.M.A.*, May 6.

The disease is acquired from wild rabbits and other wild animals and insects. It occurs as a local skin lesion and as a generalized infection with fever. Both streptomycin and aureomycin previously have been shown to be valuable in treating tularemia.

Advances in Nutrition Promise Greater Vigor and Longer Life.

Newer advances in nutrition promise better control of disease, greater vigor and longer life, according to Dr. James R. Wilson, Chicago, secretary of the American Medical Association's Council on Foods and Nutrition.

Enrichment and fortification of cheap staple foods, such as bread, milk and oleomargarine, addition of iodine to table salt and discovery of the B complex vitamins were cited by Dr. Wilson as major achievements in nutrition which are making important contributions to health and vigor.

There is evidence that good nutrition has been important in producing the increase in height observed in the United States during the past 30 years, and that it may play an important role in delaying the degenerative changes of aging, he pointed out.

Practically all scientific knowledge of nutrition is relatively new, he said. The vitamin series dates from the work of Dr. Elmer V. McCollum at the University of Wisconsin in 1909. Dr. McCollum isolated and named vitamin A and vitamin B_1. Isolation of vitamin B_{12} and its use to prevent degeneration of the nervous system in pernicious anemia is an achievement of the last few years.

On the frontiers of nutrition, the search for additional useful vitamins and minerals continues and research is being carried on in geriatrics (the science of aging) and plant genetics.

Effective application of scientific knowledge of nutrition largely depends on housewives, Dr. Wilson said. As "administrators of civilization" they are important in bringing advances in nutrition into practical use.

Dr. Wilson emphasizes these rules to follow daily for good nutrition at any age above infancy:

1. Eat an egg and at least one serving of another protein food.
2. Use whole grain or enriched bread and other whole grain or enriched cereal products.
3. Make sure the salt in the kitchen is iodized unless you live near the sea coast or eat sea foods liberally.
4. Drink pasteurized milk (a pint for adults, a quart for children and old persons—vitamin D enriched for all persons who get little sunlight).
5. Eat at least two servings of green leafy or yellow vegetables and at least one serving of citrus fruit or tomatoes and other fruits or vegetables containing vitamin C.
6. Use butter or enriched oleomargarine.

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

The Commonwealth's Plan for Reimbursement for Hospitalization.

It is interesting to note that nothing new in principle was legislated or instituted by the State in the Commonwealth's present plan of reimbursement for hospitalization in State mental hospitals under the provisions of Act 536, of 1948, which is now in force.

In November, 1769, George III, the Governor, Council, and Burgesses of the then General Assembly passed a law entitled "An Act to make provision for the support and maintenance of idiots, lunatics, and other persons of unsound mind", being Chapter XXVIII of the Laws of Virginia, Hening, Volume VIII, page 678. This Act authorized the purchase of a parcel of land not in excess of four acres convenient to the City of Williamsburg, and the erection of a building. The Honorable John Blair, William Nelson, Thomas Nelson, Robert Carter, Peyton Randolph, Robert Carter Nicholas, John Randolph, Benjamin Walker, John Blair, Jun.; George Wythe, Dudley Diggers, Jun.; Lewis Burwell, Thomas Nelson, Jun.; Thomas Emerald, and John Tazewell were named as trustees for the hospital to be known by the name and style of the Court Directors of the public hospital. Section VIII of this Act is as follows:

> "VIII. *And be it further enacted, by the authority aforesaid,* That the said Court of Directors are hereby empowered and required to receive such person into the said hospital, and, from time to time, to make and ordain such rules and orders for the better government of such person, according to his or her quality, and the allowance made out of his or her estate, as to them shall seem necessary or expedient. And the said court of directors are hereby directed and required to keep distinct and proper accounts of the expenditure of all such monies which shall be paid into their hands, to be laid before the General Assembly when the same shall be called for."

The provision for the maintenance of inmates in the hospital to be paid from their estates where able, continued from the inception of the Act in 1769, with very few changes in the statute, until 1906.

This Colonial Act, however, failed to set up an agency to collect the amounts due the hospital from the estates of the inmates.

There is now a division in the Department of Mental Hygiene and Hospitals, an established Agency, authorized under the present law, whereby "the estate of any patient is first legally liable". However, if such patient's estate is inadequate to meet the requirements and pay $40.00 per month, then the husband is liable for his wife or children, and the children in turn are liable for their parents; provided the children are sixteen years of age or over and have the ability to pay. All of this being discretionary with the Commissioner to accept less than $40.00 per month stipulated. Where the Commissioner is satisfied that a real hardship is imposed upon any of those legally liable, no charge is made. In other words, the result of the present law is to see that the estate or those legally liable and who are financially able, meet the full requirements and pay the $40.00 per month. In this way added services and facilities should be provided for better care of our mentally ill; thus, no one is imposed upon or made to contribute to this good cause unjustly.

The Indiana Council for Mental Health has recently completed a survey in which information received from 41 states shows that each of these states, with the exception of Illinois, makes a charge for the maintenance of patients in their state mental hospitals. The charges range from $20.00 per month to a maximum of $3.00 per day for general care. In New York State, in cases where a patient can afford the price of private care the charge is from $200.00 to $300.00 per month. Otherwise, their charges are flexible from year to year and their maximum charge is $75.00 per month. The rate charged in New York State is not specified by law, but by consideration of direct and indirect costs. In California the charge is flexible with a maximum of $3.00 per day. The California charges are based on a combination of current per capita cost and estimated per capita for ensuing fiscal year.

The present Act covering hospitalization in the Virginia State mental hospitals is proving effective and the response of the public is very gratifying.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for April 1950 as compared with the same month in 1949 and for the period of January through April 1950 as compared with the same period in 1949, is as follows:

	April 1950	April 1949	Jan.-April 1950	Jan.-April 1949
Typhoid and paratyphoid	4	11	24	24
Diarrhea and dysentery	222	215	1,174	1,099
Measles	499	5,452	1,012	15,421
Scarlet fever	85	78	451	317
Diphtheria	11	10	79	52
Poliomyelitis	3	1	13	9
Meningitis	14	11	60	40
Brucellosis	10	6	23	20
Rocky Mountain spotted fever	0	1	0	1
Tularemia	2	0	18	7

THE DIAGNOSIS OF POLIOMYELITIS

As we come to the beginning of the season when we can expect an increase in the number of cases of poliomyelitis reported in Virginia, we naturally review the experience of last year with the hope that it may cast some light on the probable experience of this year. In tabulating reported cases we find difficulty in evaluating the cases that may be variously classified as sub-clinical, abortive, or non-paralytic. Should they be tabulated as poliomyelitis or should only those cases be recorded that resulted in definite paralysis?

For prophylactic reasons during the poliomyelitis season, particularly if there is high prevalence in the community, it is right that every suspect case should be regarded as poliomyelitis until positive diagnosis is reached. It is recognized that early diagnosis and the establishment of prompt and adequate medical care are of fundamental importance. Fortunately the National Foundation for Infantile Paralysis provides liberally for this pre-diagnostic service.

The diagnosis of acute paralytic poliomyelitis is relatively simple. There is usually a history of febrile illness accompanied or followed by flaccid paralysis. There is increase in the number of cells and protein in the cerebro-spinal fluid. Stiffness of neck and back are often associated.

In cases without paralysis various possibilities must be considered including the encephalitides, cerebro-spinal meningitis, tuberculous meningitis, brain tumor, or the accompanying meningeal signs which may accompany any acute infection in young children. In the young infant with scurvy the limbs sensitive to movement may simulate poliomyelitis while arthritis of the spine is another condition to be ruled out. It must be remembered that an increase of mononuclear cells and protein in the spinal fluid occurs in other conditions (encephalitis, mumps, otitis) as well as in poliomyelitis.

The presence of spasticity with a positive Babinski eliminates poliomyelitis and suggests brain tumor, brain abscess or multiple sclerosis.

The most certain means of diagnosis is the isolation of the virus from the stools or pharyngeal washings of the patient. Howe reports that virus may be recovered from stool specimens for weeks after onset of symptoms and from nasopharyngeal washings within six days of onset. Since, however, the facilities for such virus isolation are strictly limited, this is not a practical procedure for the average case. What is needed is a skin test such as the Tuburculin and Schick Test, or an agglutination test such as the Widal Test in typhoid fever.

With limited facilities for the diagnosis of poliomyelitis it is important for parents and physicians to maintain awareness during the period of poliomyelitis in the community. Too often with a sick child a day or so passes before the family is sufficiently alarmed to call a physician and a day or two may elapse before the physician recommends hospitalization.

One thing is certain. Every child with fever should be confined to bed and even if in a few days he seems well, still certain precautions should be taken. These include the avoidance of excessive activity, fatigue, chilling, overheating.

It is of diagnostic importance to determine the interval between the initial febrile state of the disease and manifestation of central nervous system involvement.

Upon making a presumptive diagnosis of poliomyelitis the physician should present to the parents as accurately and clearly as possible the expected sequence of events. He must attempt to avoid misunderstanding, apprehension and panic. The later willingness of patient and parents to cooperate in follow-up care may be influenced by the proper handling of the early stages of his disease.

MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Democracy and Socialism Discussed

Following a meeting of District Councillors of the 8th Congressional District in Arlington, May 5 an evening program was presented to the medical and lay leaders of the 8th and 7th Congressional Districts.

The main feature of the evening program was an address by Mr. Leonard E. Read, President of the Foundation for Economic Education on the subject —"Students of Liberty". He was introduced by the Hon. H. W. Smith, Congressman of the 8th Congressional District.

Mr. Read's talk suggested a philosophy by which the doctors might combat the growing symptoms of a disease called socialism. The enthusiastic response of a large audience was indication of interest in the subject and of a most able presentation.

Many local organizations were represented as well as the Washington office of the A.M.A.

Mr. Read is available to talk to large audiences on this subject.

Members of the District Council, Presidents and Secretaries of local medical societies of the 8th Congressional District were invited for the afternoon session and dinner at the Washington Golf and Country Club.

Hill-Burton Appropriation Not Reduced

It seems that recent action taken by the United States House of Representatives does not reduce the appropriation from the Hill-Burton Fund to the Hospital Survey and Construction program.

The House adopted an amendment to the appropriation bill which leaves the appropriation at $150 million—the sum already recommended.

This should make possible the continued expansion of the hospital and health center building program throughout Virginia, including some of the funds for the proposed Negro Tuberculosis Hospital adjacent to the Medical College of Virginia in Richmond.

Grievance Committee Publicized

Some local medical societies are discussing the advisability and inadvisability of publicizing the establishing of a grievance committee.

Word from the Alexandria Medical Society is to the effect that "This committee is believed to be such an integral part of the society in relation to the community that a broadcast was arranged through a local radio station.

"The aims of the society were set forth and emphasis was placed on the fact that lay-people could be served by the Grievance Committee".

Colonial Doctor To Be Honored

Plans are under way to honor one of Virginia's early colonial physicians with the placing of an appropriate plaque in the Old Jamestown Church at Jamestown, Virginia.

It has been suggested that the Williamsburg-James City Medical Society arrange the ceremony which would be open to the public.

The unveiling ceremony might be held in connection with the Annual Celebration of the 343rd Anniversary of the town to which the members of the General Assembly of Virginia are invited.

Southeastern Regional Conference

A Southeastern Regional Conference of 8 states was held on May 13 at Raleigh, North Carolina.

This was sponsored by the Council on Medical Service of the A.M.A.

The main theme of the conference was the promotion of Pre-Payment Medical Care and Hospitalization Insurance and the extension of medical care in rural areas.

Dr. Mulholland served as general chairman for the one day conference and the following representation from Virginia were expected to attend: Dr. H. B. Mulholland of Charlottesville; Dr. John O. Boyd, Jr., of Roanoke; Dr. John C. Crawford of Norfolk; Dr. John T. T. Hundley of Lynchburg; Dr. R. C. Potter of Marion; Dr. W. R. Pretlow of Warrenton. Also Mr. Leonard O. Key of the Roanoke Surgical Care, Inc., Roanoke; Mr. J. Dunston Wingfield, Managing Director of the Tidewater Hospital Service, Norfolk and Mr. Henry S. Johnson of Richmond.

H. R. 6000

H. R. 6000 moves a step closer to passage and 800,000 regularly employed workers are to be covered. The doctors of medicine are not included in the latest version.

Also important is the fact that the section on total and permanent disability has been deleted.

MEDICAL SOCIETY OF VIRGINIA

MEDICAL SERVICE COMMITTEE

The Physician in the Rural Area.

Never before has there been so much discussion both in lay and medical circles concerning the general practitioner—particularly the practitioner in the rural areas. Very often these discussions stress the inadequacy of rural medical care, and bring up the problems of attracting and holding physicians in rural areas.

In the April MONTHLY our committee discussed the Community Health Council as the clearing house for all agencies interested in community health. The surveys of the local health council, together with its recommendations and activities, will develop a better understanding on the part of the community towards its own responsibilities with reference to all health matters in its area. Among these responsibilities might very well be the initial provision of office, equipment, and home for the rural physician.

At the National Conference on Rural Health held in 1947, certain fundamentals were outlined as necessary to attract and retain physicians in rural areas. Among these fundamentals were: (1) the provision of adequate medical facilities; (2) the provision of a reasonable income for physicians in these areas; (3) a concomitant improvement of community educational and cultural facilities; (4) the extension of good roads throughout the area.

Now the attainment of adequate medical facilities for any rural community starts with the facilities available in the doctor's office. Assuming the doctor has taken a complete history and done a complete physical examination, the confirmation of his clinical impression is attained by confirmatory laboratory work-up. For the majority of patients, the laboratory work-up need be neither extensive nor involved. However, if the doctor has to do the laboratory work himself, he usually limits it to a urinalysis and a Tahlquist hemoglobin determination. Very occasionally he will do a white count. Yet someone interested in laboratory work could undoubtedly be found in the community and trained to do complete blood counts, sedimentation rates, NPN, and blood sugars. The scope of this simple office laboratory could gradually be increased to include such other tests as the physician finds necessary. A small x-ray unit and an electrocardiograph could later be added. In questionable cases both films and tracings could be sent away for interpretation.

Facilities such as the above are impossible, however, to the physician in the rural area—especially the younger physician—unless the community itself through education and understanding of its own responsibilities towards the securing of a physician, helps finance the equipment. Arrangements could be made for the physician to buy back the equipment as he becomes established. Where there is more than one physician in a community, equipment or an office laboratory could be shared—thus cutting down on overhead.

With a set-up such as described above, and the needs of the community adequately surveyed by a local community health council, there would be no question that a reasonable income to the physician would be assured.

What are the facilities available to the physician in the rural area for continuation education? Both of our medical schools are coordinating programs of clinical conferences at the smaller hospitals once a month. Not only are cases presented by the staff for help in diagnosis and treatment, but physicians in the outlying areas are invited to bring to these conferences their own patients who present diagnostic problems. The consultant meets the physician on his own ground and the questions and discussions that ensue provide more education than many an hour spent in a formal didactic course.

It is strongly felt that if the problems of rural health were approached by methods outlined above, there would be no lack of medical care in the rural areas.

JOHN G. GRAZIANI, M.D.,
Farmville, Virginia

BOOK ANNOUNCEMENTS

Medical Management of Gastrointestinal Disorders. By GARNETT CHENEY, M. D., Clinical Professor of Medicine, Stanford University Medical School. The Year Book Publishers. Chicago, Illinois. 1950. 478 pages. Cloth. Price $6.75.

This book is published by The Year Book Publishers and apparently intended as a general practice manual. It deals chiefly with symptomatology of patients with G.I. complaints and its approach is primarily through symptomatology. It deals largely with familiarizing the student to the approach concern in dealing with patients of this nature. The scope of the book is apparently directed towards the general practitioner and symptomatic treatment. It is lacking in differential diagnosis, pathology, laboratory findings, and is not a complete text for gastroenterology even to the general practitioner. It may prove helpful to the busy general practitioner in an over-all understanding of some of the common conditions met with, but it does not appear to be either concise enough or complete enough for use as a general review text or for the use of medical students.

J. O. B.

Medicine Throughout Antiquity. By BENJAMIN LEE GORDON, M.D., Member, American Association of the History of Medicine and American Academy of Ophthalmology and Otolaryngology; Attending Ophthalmologist to Shore Memorial Hospital, Somers Point, New Jersey, and to Atlantic County Hospital for Mental Diseases, Northfield, New Jersey; etc. Foreword by Dr. Max Neuburger. Philadelphia, F. A. Davis Company, 1949. xvii-818 pages. Cloth. Price $6.00.

This work covers a period from the Stone Age until the fall of Rome in 476 A.D. The author has a very difficult task, full of pitfalls unless he has good clinical background as well as a wide knowledge of history. Fortunately Dr. Gordon has both. In the paleolithic era he has only fossils and instruments to go by. These he interprets with the aid of his knowledge of medicine as practiced by primitive peoples in our own time. After man began to make inscriptions and records in writing, the task is scarcely less difficult because terms are vague and many have lost their meaning completely. Even in the comparatively recent times of Galen, anatomical knowledge was vague and confused, to say nothing of physiology and pathology. Hippocrates, for instance, taught that both the right and left lung had three lobes, whereas Galen was equally as positive that each had only two lobes.

After a general survey of primitive medicine, the author discusses in great detail the medicine of Assyro-Babylonians, Ancient Egyptians, Ancient Hebrews, Persians, Indians, Chinese, Japanese and prehistoric Amerinds. Then follows a description of the Greco-Roman period with its many schools, philosophies, and cults. His description of Talmundic Medicine is particularly valuable as this subject is little understood. It is not essentially a medical work, but an interpretation of the Jewish law by scholars who had been scattered all over the Near East by the Roman conquest. The pathology, for instance, arose from investigation of animals to determine which were permissible as food and which were not. It was not even written in Hebrew but in Talmundic dialects. It is a collection of opinions and decisions of more than 3,000 scholars, covering a period of about 650 years. "In other words, it was an encyclopedic work embracing all matters known to antiquity."

In a way, Dr. Gordon's work is like the Talmud, it embraces all medical matters known to antiquity, but it is written by one man and it is easily accessible. It is a work that one would want to keep for handy reference.

M. P. R.

Sexual Deviations. By LOUIS S. LONDON, M. D., Diplomate, American Board of Psychiatry and Neurology, etc. And FRANK S. CAPRIO, M. D., Member, American Psychiatric Association, etc. With a Foreword by NOLAN D. C. LEWIS, M. D., Professor of Psychiatry, College of Physicians and Surgeons, Columbia University, etc. The Linacre Press, Inc. Washington, D. C. 1950. xviii-702 pages. Cloth. Price $10.00.

This book is an extremely comprehensive and informative study of the subject and should find its place among the classic works of Krafft-Ebing, Ellis, Freud and Stekel. The case histories are vivid and written in detail. The psychopathological explanations are based upon the psychoanalytic concepts of Freud. The authors emphasize their thesis that sexual deviations are not pathological entities but symptoms of underlying neuroses, are curable, and are best treated by psychoanalysis. It is worth-while reading for physicians, social workers, legal authorities, and intelligent, mature lay readers.

R. E. C.

EDITORIAL

Charles Louis Alphonse Laveran—1845-1922

THE role of disease in history and geography is a neglected field. Occasionally a great epidemic has been the subject of a painting (Elie Delaunay), more frequently the subject of a writer (DeFoe), and at rare intervals the inspiration of a great literary work (Decameron), but no study has been made of its effect on the course of history. Endemic disease has received even less attention in literary or historical writings.

Recently, we saw some magnificent ruins of Greek temples dating back to the 6th Century B.C. They were standing in startling isolation, in a deserted country side. The reason of their abandonment was not war nor conquest but malaria. The progress of this phenomenon was so insidious that we have been unable to learn the date. This is not an unique case. It has happened in other parts of Italy and elsewhere throughout the world. It was in a fair way of happening in the southern part of the United States and in the Mississippi Valley.

Although we had an empiric cure in quinine, we knew next to nothing about the cause of malaria or its prevention. For the knowledge of the etiology of the disease we are indebted to a French Army surgeon working in Algiers and to an Englishman in the Indian Medical Service. Laveran discovered the parasites of malarial fever in 1880, and 17 years later, Sir Ronald Ross, the Laveran plasmodia in the stomach wall of the Anopheles mosquito which had fed on the blood of malarial patients. These bodies had been seen in the red blood cells previously but were looked upon as artefacts. When Laveran saw the actively moving filaments he knew they were parasites, and surmised that they were the cause of malarial fever. He worked out the life cycle in the human being and suggested that there was an intermediate host. This was by no means Laveran's only discovery. He continued his investigations in various fields. He classified the hematozoa and established a new science, that of protozoology. He has been called the father of protozoan pathology.

Laveran was born in Paris, June 16, 1845 and graduated in medicine at Strassburg in 1867. His father was Professor of Epidemics and Diseases of Armies and also Director of the Val-de-Grâce Military Hospital. Laveran, upon his return from Algiers, held the same chair. In 1907, having obtained his release from the Army, he became Director of the Honorary Service of the Pasteur Institute and founded the "Societé de Pathologie Exotique", the presidency of which he held for twelve years. In 1907 he was awarded the Nobel Prize in medicine, and with this money he established the laboratory of Tropical Medicine in Rue Falguière. Laveran was a member of every scientific academy in France and in 1907 he received an honorary degree from the University of Liverpool.

In connection with the celebration of the centenary of the French conquest of Algiers, a monument to his memory was erected at Constantine. A bronze medallion of Laveran was unveiled in the Val-de-Grâce Military School and the little square in front of Val-de-Grâce was given his name.

Laveran had a number of devoted pupils and was blessed with a wife who understood her position as wife of a great scientist and devoted herself to making his long life a happy one.

This is the 13th of a series of "Doctors for whom the public should be thankful."

The American Social Hygiene Association

THE presence of venereal disease is a sad commentary on human nature. That syphilis still ranks high among the causes of death is not generally known. Theoretically, it has all, or almost all, the factors that make a disease easy to control. In the first place, there are simple and accurate laboratory diagnostic tests. The causative organisms can be seen by dark field examinations of the initial lesion. Furthermore, its presence in the system can be demonstrated by a number of tried and proven serological tests. In the second place, there are efficient prophylactic methods that an individual may use at or shortly after exposure, either in the shape of a local application or medicine to be taken by mouth. Thirdly, there are quick cures. The first announcement of arsphenamine stated that a single intravenous dose would kill the spirocheta pallida in the entire system. Since then, each new cure has been heralded by similar statements. Experience has shown that such statements are not entirely accurate. Nevertheless it is true that any of the new cures render the patient noninfectious in a remarkably short time. It is also true that the patient can be cured if he can be kept under observation long enough. The question is how much and how long must the treatment be kept up to effect a permanent cure.

The weak point in the campaign to eradicate syphilis is that it is a painless disease at least in its first and early second stages. In a recent discussion by Dr. W. W. Aufranc, it was stated that in 1949 one hundred and fifty thousand persons were infected, and of these 80,000 cases went undiscovered. Six thousand were sent to mental institutions on account of syphilis, 14,000 children were infected prenatally and 13,000 persons died of the disease. If the entire population of the United States were tested serologically, 3,000,000 would be found to have a positive reaction.

Not only is syphilis prevalent but it seems to be on the increase. In Richmond, the death rate per 100,000 population in 1948 was 8.0 and in 1949 it was 9.2. It was tenth among all causes of death in each year. But syphilis is not all the problem. Gonorrhoea is even more prevalent than syphilis, although it is not as great a hazard to the public health. In the first place, it is an acute self-limited disease and in the second place, it has fewer serious complications. The painful onset drives the male to seek treatment early. Unfortunately, the female may harbor gonococci without having any symptoms. However, she is more apt to have late sequelae, such as arthritis or heart disease. All too frequently she has a salpingitis and thus a youthful indiscretion may jeopardize her chances of ever having a baby. Gonorrhoea is easily cured. A single injection of penicillin will usually cure it. This, however, is not without its disadvantages. Already, syphilographers are complaining that these "single shots" are obscuring the recognition of a simultaneously acquired but more slowly developing luetic infection. A factor in the spread of venereal disease is the vicious bit of folklore to the effect that coitus with a virgin is the best cure for gonorrhoea. This untruth is widely believed by negroes and ignorant people.

There are still other venereal diseases—chancroid, lymphogranuloma inguinale and condyloma acuminatum—but they produce no new problems of prevention. One would think that their presence would discourage intercourse, but evidently this is not so, for one sees them in prenatal clinics.

Thus we see human nature, ignorance, folklore and superstition all combine with venereal diseases against the health and happiness of the people. Even "literature" is on their side. Lord Chesterfield's description of the sex act, i.e., "The position is ridiculous, the pleasure is momentary and withal it is very expensive" is practically unknown, whereas the writers of the modern best sellers spend hours dreaming up new

adjectives to describe the ecstasies of their heroines. Many of their readers are driven to consult their gynecologists because they feel cheated and think they are abnormal. The truth must be told.

The health departments are actively concerned. They maintain clinics for the diagnosis and treatment of venereal diseases and supply penicillin for treatment by private physicians. The great problem, however, is case finding. For this, the cooperation of the public is needed. The public must be "sold" on the idea that the problem is its problem. The public must be shown that more than one half of the new cases are boys and girls in their teens and early twenties, who must be taught a sound attitude toward sex conduct. The American Hygiene Association, an outstanding private agency, has such a program of education. It needs your support. The Richmond Social Hygiene Committee is composed of the following well known persons:

Dr. Thomas Murrell, Dr. William T. Sanger, Monsignor Leo J. Ryan, Bishop H. St. George Tucker, Mrs. Jacob Cohn, Dr. Lonsdale J. Roper, Mr. Robert Henley, Mr. Rice M. Youell, Dr. Emily Gardner, Dr. Raymond Kimbrough and Dr. Wyndham B. Blanton, Chairman. Make your check payable to the American Social Hygiene Association and send it to the Chairman of the Richmond Committee.

"The G.P."

IN less than three years the American Academy of General Practice has risen to a place of prominence which ranks it with the three greatest medical organizations in America. With a dues paying membership of over 15,000 and growing steadily at a rate of 100 new applicants each week, it is expected that within a few months, it will be second only to the A.M.A. in numerical strength.

In this short period of time it has selected a national executive secretary who, with the aid of a capable staff, has accomplished the phenomenal. The two annual scientific assemblies have attracted universal attention from medical circles both for the numerical attendance and program substance. Now, perhaps the crowning achievement of its organization is the birth of the "G.P." Journal which entered the field with its April issue. Many competent authorities, including national advertising agencies, consider this journal is destined to become the most informative medical journal in America for its members.

Just as the first issue was ready for the press, its editor, Dr. Kenneth Albrecht, met a sudden, accidental death. But, like all apparent set-backs this young organization has experienced, sympathetic cooperation from a powerful source was on hand. Dr. Walter Alvarez, one of the greatest names of all time in American medical history, immediately accepted the challenge and is now the new Editor-in-Chief. He is resigning from the Mayo Clinic this year and will make his home in Chicago where he will direct the destiny of this new journal. Although 65 years old, he is full of enthusiasm and a genuine friend of the family doctor. In accepting he stated, "I have a strong desire to spend what years are left to me to get knowledge quickly from the laboratories and the specialists, into the hands of the practitioner. I want the new G.P. magazine to be full of exactly the information the family doctor wants. The job of the 'G.P.' is to pass on the new things to the men on the firing line in practice."

The advisory board of the editorial staff is made up of about 300 of the most outstanding names in American medicine in the 27 various fields of specialty which they represent.

The feature articles and various departments of the first issue, in accord with an established editorial policy for all future issues, are short, concise, and written well to the point on subjects of momentous interest and importance to all general practitioners.

Typical of the comments of the laity are those of Dr. Ian Stevenson, writing in the May issue of *Harper's Magazine*. "There is need for a new medical journal dedicated not to the competitive publication of isolated chips of information, but to the broad understanding of disease."

It will be distributed monthly not only to its 15,000 members, but to medical schools and libraries of all lands.

E. E. HADDOCK

SOCIETY PROCEEDINGS

The Patrick-Henry Medical Society

Held its regular quarterly meeting on April 14 at the Martinsville General Hospital, with Dr. John R. Clark, president, in the chair. There was an attendance of twenty-three. There was considerable discussion of the payment of A.M.A. dues and motion was made to defer action on this until further information was obtained.

In accordance with request made by the Medical Society of Virginia, a Grievance Committee was appointed with Dr. W. N. Thompson as chairman, and Drs. T. H. Dickerson and Henkel Price as the other members.

Upon the completion of these and several other business matters, Dr. J. A. Ravenel introduced the guest speaker, Dr. J. O. Williams, associate in pathology at the Bowman-Gray School of Medicine, who discussed the pathological findings in the case presented at the clinical pathological conference. Mr. B. D. Marton, Jr., medical photographer at the Bowman-Gray School, assisted Dr. Williams in presenting colored slides during the discussion.

J. W. CLARK,
Secretary

Roanoke Academy of Medicine.

At the regular meeting of the Academy on May 1, the following were elected for the coming year and will take office at the October meeting: President, Dr. E. G. Gill; vice-presidents, Dr. Ira H. Hurt and Dr. George S. Bourne; and secretary, Dr. Samuel F. Driver. Dr. W. W. S. Butler and Dr. Henry Lee were elected to fill two vacancies in the Executive Committee, and Dr. John Gardner and Dr. Garrett Gooch, III, to vacancies on the Judiciary Committee. Delegates elected to represent the Academy at the Roanoke meeting of the State Society are: Drs. Frank A. Farmer, Charles H. Peterson, Marcellus A. Johnson, Jr., C. T. Burton, John O. Boyd, Sr., and Harry B. Stone, Jr.

Dr. Marcellus A. Johnson, Jr., and Dr. William H. Kaufman are the retiring president and secretary, respectively.

The Wise County Medical Society

Met at the Hotel Norton on the evening of April 12, and twenty members enjoyed a "Dutch Country Ham" dinner.

The application for membership was received from Dr. J. A. Pettigrew of Dunbar. It was approved by the Board of Censors and will lie on the table until our next meeting.

Resolutions were adopted on Drs. Harshbarger and Baker (published under Obituaries).

The society voted that hereafter at our meetings we will have only one special speaker.

Dr. Roy M. Hoover of Roanoke gave an authoritative lecture on fractures and their treatment. This was one of the best presentations we have had and was followed by a question and answer period.

W. B. BARTON, *President*
J. D. CULBERTSON, *Secretary*

Northampton County Medical Society.

At the dinner meeting of this Society on April 20, at Eastville Inn, Dr. S. K. Ames spoke on "Parenteral Fluid Therapy" and stressed the importance of the potassium ion in treatment of the debilitated.

He showed by chart the normal ionic content of the various body fluids, and outlined the relative importance of each in various conditions that result in depletions.

At the business session Dr. J. R. Mapp was elected delegate to the next convention of the Medical Society of Virginia in Roanoke in October, and Dr. S. K. Ames was elected as alternate delegate. There followed a discussion of routine business. The Society is strongly supporting the American Medical Association in the fight against Socialism.

Dr. W. C. Henderson is president of the Society, and Dr. John R. Mapp, secretary. Others present included, also, Drs. Robertson, Jackson, Lynch, Sturgis, Jr., and Denoon.

Northern Virginia Clinical Assembly.

The Alexandria Medical Society held its first annual clinical assembly in that city on Sunday, April the 16th. An excellent program included the following discussions:

IMMEDIATE TREATMENT OF FRACTURES—Custis Lee Hall, M.D., George Washington University.

VAGINAL BLEEDING—J. Mason Hundley, Jr., M.D., University of Maryland.

CLINICAL APPLICATION OF THE NEWER ANTIBIOTICS AND THEIR LIMITATIONS—Theodore E. Woodward, M.D., University of Maryland.

PEDIATRIC EMERGENCIES—Alexander J. Schaffer, M.D., Johns Hopkins University.

ACUTE SURGICAL ABDOMEN—Robert J. Coffey, M.D., Georgetown University School of Medicine.

PSYCHIATRIC EMERGENCIES AND WHAT THE MEDICAL MAN CAN DO—Harvey J. Tompkins, M.D., Veterans Administration.

TREATMENT OF DUODENAL ULCER—J. Edward Berk, M.D., Temple University School of Medicine.

ACUTE CARDIAC EMERGENCIES—Sidney Scherelis, M.D., Johns Hopkins University.

A small registration fee included the clinical session, the physicians' luncheon and the cocktail party in the evening. There were ninety-three registrants and all felt the assembly was quite a success. Dr. Milton R. Stein was chairman.

NEWS

Scientific Exhibits.

Very excellent and ample space for the Scientific Exhibits at the Hotel Roanoke has been assigned to the Exhibit Committee. The same decorating firm which furnished the booths last year will again service us. Those who saw the exhibits last year will remember the same equipment is furnished as is used at the A. M. A. Viewing boxes for transparencies are also furnished which are fitted with fluorescent lights.

In order to secure desirable space, all exhibitors are requested to write the Chairman of the Scientific Exhibit Committee, Charles H. Peterson, M.D., 603 Medical Arts Building, Roanoke, Va., for application blanks as soon as possible. This will enable the committee to "block out" the space more efficiently.

Dr. Sanger Honored.

Dr. William T. Sanger, president of the Medical College of Virginia, Richmond, was honored at a program April 27 at the college on the occasion of his 25th year as president of the college. Climaxing a program of tributes Doctor Sanger was given a new car by the faculty, students and personnel of the college and presented a silver bowl by the college's Board of Visitors. Robert T. Barton, Jr., chairman of the Board of Visitors, presided at the program. Those paying tributes to Doctor Sanger were: Governor John Stewart Battle of Virginia, Mayor W. Stirling King of Richmond, Dr. L. J. Roper, commissioner of the Virginia State Health Department, Dr. George M. Modlin, president of the University of Richmond, Dr. Harry L. Claud, an alumnus, Dean Harvey B. Haag of the College's School of Medicine and Wyndham B. Blanton, Jr., president of the student body of the college.

During this period there has been a considerable increase in the enrollment of students and enlargement of the faculty, the hospital division has greatly expanded and noteworthy progress is indicated by the fact that money for research when Dr. Sanger became the college's president was negligible and today amounts to $343,356.50, and gifts, grants and bequests were negligible in 1925 but these last year amounted to $432,563.96. The principal of endowment and trust funds was $13,265.00 in 1925 and today it is $3,200,000.00 Buildings have increased from six to 23 and the value of the physical plant and equipment from $374,,476.88 to $6,000,000.00.

Dr. Sanger said that among the projects he was impatient to start are a new dental building, the remodeling of another building to care for the chronically ill, a building to house the college's research activities and more dormitory facilities for students.

Dr. H. Cowles Rucker Honored.

Dr. Rucker was honored on April the 29th by three hundred people of Powhatan, Amelia and Chesterfield Counties in recognition of his thirty years of service among them. Dr. James L. Hamner of Mannboro and Judge J. G. Jefferson of Amelia were among those who participated in the ceremony at which time Dr. Rucker was presented with a gold watch and chain and a purse of money. The watch bore the inscription "He went about doing good." Dr. Rucker, a native of Amherst County, graduated in Washington, D. C., and practiced in Wise County before locating in Amelia in 1920.

Dr. Vincent W. Archer,

Head of the Department of Roentgenology at the University of Virginia, will attend the Sixth International Congress of Radiology in London, July 22-26, where he will have a scientific exhibit and present a paper. Mrs. Archer will accompany him.

Post Graduate Symposium on Anesthesiology.

The Department of Anesthesiology of the University of Pittsburgh School of Medicine announces a Post Graduate symposium on the Basic Sciences Related to Anesthesiology in cooperation with several local hospitals. The course will be held from June 19 to June 23, and the registration fee is $25.00. This course will be limited to thirty participants.

Registration and full particulars should be obtained from Chairman of the Committee on Graduate Medical Education, University of Pittsburgh School of Medicine, Pittsburgh.

The Virginia Obstetrical and Gynecological Society

Had its 1950 Spring Travel Clinic in New Orleans in April. For the first time the members took their wives and, in addition to an excellent program, time was allowed for sight seeing. On the first day the program was in charge of Department of Obstetrics and Gynecology of the Louisiana State University Medical School and, on the second day, the Department of Obstetrics and Gynecology of Tulane University presented the program. On both days operative clinics were held in the mornings and papers were given in the afternoon. Social features added to the enjoyment of the visitors. Those registered were: Dr. and Mrs. Harvey G. Bland, Dr. and Mrs. Chester D. Bradley and Dr. and Mrs. Waverly R. Payne of Newport News; Dr. and Mrs. M. H. Bland and Dr. and Mrs. William E. Byrd of Norfolk; Dr. and Mrs. Mercer Neale, Heathsville; Dr. Sam Oglesby, Dr. and Mrs. John R. Saunders, Dr. and Mrs. Joseph E. Warren and Dr. A. D. F. White of Lynchburg; Dr. and Mrs. James Parrish, Portsmouth; Dr. and Mrs. Joseph C. Parker, Dr. and Mrs. Edwin M. Rucker, Dr. and Mrs. Spotswood Robins, Dr. and Mrs. Henry C. Spalding, Dr. L. L. Shamburger and Dr. and Mrs. H. Hudnall Ware, Jr., of Richmond; Dr. and Mrs. George Speck, Arlington; Dr. and Mrs. William N. Thornton, Charlottesville; Dr. and Mrs. William D. Varner, Franklin; Dr. and Mrs. C. F. Beckert, Gadsden, Ala., and Dr. E. W. McCauley, Bluefield, W. Va.

Memorial Guidance Clinic.

At the annual meeting of the Clinic in Richmond, held recently, Dr. Rex Blankinship was elected president of the board of directors, and Dr. William H. Kelly remains director and secretary of the board. Dr. W. T. Thompson, Jr., and Dr. R. C. Longan were elected members of the board for a term of three years. Other doctors on the board are Dr. Manfred Call, III, Dr. H. W. Decker, Dr. Howard R. Masters, Dr. C. L. Outland and Dr. R. D. Garcin, Sr.

Dr. Victor C. Vaughan, III,

A native of Richmond and a son of the late Dr. Warren T. Vaughan of this city, has been appointed as an assistant professor in the department of pediatrics at the Yale University School of Medicine, New Haven, Connecticut.

Lt. Col. George R. Carpenter,

Formerly connected with the State Health Department and engaged in health work in Virginia before entering the army in 1942, has been named surgeon of the Berlin, Germany, military post.

Dr. R. Finley Gayle, Jr.,

Richmond, was elected secretary of the American Psychiatric Association at its meeting in Detroit, Michigan, the first week in May.

The Virginia Society of Anesthesiologists,

Which was organized in January of this year, has received a charter as a component society of the American Society of Anesthesiologists, Inc. The aims of this Society are to advance the science and art of anesthesiology and to stimulate interest and promote progress in the various aspects of the specialty—scientific, cultural, and economic. Officers for the present year are: President, Dr. Thomas Walker, Richmond; Vice-President, Dr. Alden W. Squires, Norfolk; Secretary-Treasurer, Dr. Harold F. Chase, Charlottesville.

A luncheon meeting of the Society will be held at Roanoke on October 10, concurrent with the meeting of the Medical Society of Virginia. All physicians practicing anesthesia on a full or part-time basis are invited to participate in the activities of the Society.

All physicians in Virginia who do full or part-time Anesthesia, or who are interested in Anesthesia, are asked to contact B. H. Libien, M.D. at Riverside Hospital, Newport News, chairman of the Membership Committee. They wish to set forth to you the advantages of membership in the Virginia Society of Anesthesiologists, which is a component unit of the American Society of Anesthesiologists, Inc.

Medical Illustrators' Directory Available.

The Directory issue of GRAPHICS, the official publication of the Association of Medical Illustrators, contains the name, address, training, professional experience and reference to major published work of each member. Other information pertaining to the profession is included.

The journal, to be issued on June first, will be available to those requiring medical illustration service, and will be sent, free of charge, upon request to the Editor, Miss Helen Lorraine, 5212 Sylvan Road, Richmond 25, Va.

News from University of Virginia, Department of Medicine.

Recent visiting lecturers at the University of Virginia Department of Medicine were:

Dr. Howard C. Taylor, Jr., Columbia University. Subject: Psychosomatic Disorders in Gynecology. Dr. Taylor's lecture was the second in a series of Tiffany Williams Memorial Lectures, established last year by former residents of the University Hospital who had served under the late Dr. Williams, Chairman of the Department of Obstetrics and Gynecology.

Dr. Stanley E. Bradley, Jr., Columbia University. Subject: Renal Adaptations to Medical and Surgical Stresses.

Dr. Frank B. Walsh, Johns Hopkins University. Subject: Ocular Signs of Myasthenia Gravis and Other Systemic Diseases.

Dr. Winchell Craig, The Mayo Clinic. Subject: Intraspinal Tumors and Their Relation to General Diagnosis.

Dr. Edwin P. Lehman, Chairman of the Department of Surgery and Gynecology, University of Virginia Hospital, and past president of the American Cancer Society, was presented the American Cancer Society's 1950 medal for his work in the control of Cancer.

The following were elected to membership in the Virginia Chapter of the Society of the Sigma Xi at a meeting on March 28th.

Dr. Kenneth R. Crispell, Instructor in Internal Medicine

Dr. Richard Finley Grise, Fellow in Surgical Pathology

Dr. Glenn C. Hall, Jr., Instructor in Pharmacology

Mr. Desmond Gourley, Research Assistant in Pharmacology

Mr. James G. Hilton, Research Assistant in Pharmacology

Associates: Paul S. Derian, C. Randolph French, W. M. Hall, III, Robert S. Harris.

The following papers were presented at a meeting of the Federation Societies of the Pharmacological Society in Atlantic City by members of the Department of Pharmacology, University of Va. Medical School (April 17-21).

The Effects of Mercurial Compounds on Saccharase—by C. L. Gemmill and E. M. Bowman.

Effect of Temperature on Uptake of Radioactive Phosphate by Human Erythrocytes—C. L. Gemmill and Desmond R. H. Gourley.

The Use of Thermistors in Twin Calorimetry for Enzyme Reactions—by F. C. Holler, D. Venable and C. L. Gemmill.

Effect of *d*-and *l*-Methadone on Blood Glucose and Lactate of Dog—by D. T. Watts.

A Study of Digitoxin in Blood—James G. Hilton.

Congress in Ophthalmology and Otolaryngology.

The twenty-third annual Spring Congress of Gill Memorial Eye, Ear and Throat Hospital, had an attendance of 250 doctors from forty states and three foreign countries. Among the honored guest speakers were Dr. C. W. Mayo, professor of Surgery at the Mayo Clinic, Rochester, Minn., and Sir Alexander Fleming, the discoverer of Penicillin, London, England.

The Twenty-fourth Congress will be held in Roanoke from April 2 to 7, 1951.

Dr. Charles H. Lupton

Announces the resumption of the practice of general surgery, with offices at 405 Medical Arts Building, Norfolk.

The Jefferson Medical College,

Seventh in age of the country's medical schools, is giving special attention to the celebration of its 125th anniversary in the period from May 25th until after commencement on June 9th. This school has had a splendid record and throughout its history has conferred the Doctor of Medicine degree upon nearly 19,000 graduates of whom more than 6,000 are living.

Dr. Lewis E. Mangus,

Formerly of Harrisonburg who has recently completed a residency in Washington, has relocated in Virginia and is now in charge of the department of Anesthesiology of the Alexandria Hospital.

Dr. J. Lawson Cabaniss,

Roanoke, was elected a fellow of the American Academy of Ophthalmology and Otolaryngology during the October 1949 meeting held in Chicago.

The Neuropsychiatric Society of Virginia

Held its Spring meeting on March 31 at the Williamsburg (Va.) Inn, at which the following papers were presented:

Release of Repressed Memory by Reversalization by Dr. Eleanor Beamer-Maxwell;

The Evil Eye by Dr. James B. Funkhouser

Early Observation in the Use of Antabuse in the Treatment of Alcoholism by Dr. Merritt W. Foster.

The following new officers were elected: President, Dr. James K. Morrow, Radford; vice-president, Dr. R. C. Longan, Richmond; and secretary-treasurer, Dr. J. B. Funkhouser, Richmond.

News From State Health Department.

Dr. R. B. Wissinger has resigned effective May 1. He was Health Officer in the Alleghany-Botetourt Health District with headquarters at Covington.

Dr. Leroy Soper has resigned as Health Officer in Pittsylvania County. This resignation became effective May 12.

Dr. Stuart S. Bray resigned his position as Health Officer in the Buchanan-Tazewell Health District on April 15.

The Virginia State Health Workers Conference will be held in Roanoke, Virginia on June 7, 8 and 9.

International Academy of Proctology.

The second annual convention of the Academy will be held at the Bellevue Hotel in San Francisco, California, June 23, 24, for which an excellent scientific program has been arranged. The annual banquet of the Academy will take place on Friday evening, the 23rd.

Further information concerning the convention and a copy of the program may be obtained by writing to the Secretary, Dr. Alfred J. Cantor, International Academy of Proctology, 43-55 Kissena Blvd., Flushing, N. Y.

Medical College of Virginia News.

Dr. James D. Hagood and Rear Admiral Lewis L. Strauss will be awarded honorary degrees at the 113th Commencement program of the Medical College of Virginia on June 6 this year.

Doctor Hagood will be awarded a master of science degree in general medicine. This is a new degree established by the college to give recognition to the importance of the general practice phase of medicine.

Doctor Hagood was chosen by the college as the first recipient of the degree because he is an outstanding alumnus of the college, an outstanding general practitioner who has been honored by his profession and has served with distinction in the Virginia Senate. He is widely esteemed and greatly beloved throughout a large area of Southside Virginia. He was selected Virginia practitioner of the year 1948 and is now president of the Virginia Academy of General Practice.

At a recent meeting of the Council of Presidents of State-supported Schools, Dr. W. T. Sanger, presi-

dent of MCV, was named chairman of the group. These presidents meet bimonthly to plan in the interest of their respective schools and to coordinate the activities of their schools for greater efficiency and economy.

Dr. Lucy Scott Hill has been named to the teaching staff of the college in the Department of Psychiatry. Dr. Hill was graduated from the Medical College of Virginia in 1924. Her work will be limited primarily to child psychiatry.

Dr. Hill, who has already reported for work, came to her new position from the Fairfax County Child Guidance Clinic where she was child psychiatrist.

She previously was director of Sara T. Mayo Psychiatric Clinic in New Orleans, and also was on the staffs of Charity Hospital, Hotel Dieu, Lakeshore Hospital and DePaul Sanitarium, all in New Orleans.

With the addition of Dr. Hill to the Department of Psychiatry, MCV expects to broaden its service in its program of psychiatry for children.

Course in Medical Mycology.

A month's course in Medical Mycology, under the direction of Dr. Norman F. Conant, is to be offered at Duke University School of Medicine and Duke Hospital, Durham, N. C., July 3-July 29, 1950. The course will be offered every day in the week, except Sunday, and has been designed to insure a working knowledge of the human pathogenic fungi within the time allotted. The number of applicants for the course will be limited.

A fee will be charged for this course, upon the completion of which a suitable certificate will be awarded. Please direct inquiries to Dr. Norman F. Conant, Professor of Mycology, Duke University School of Medicine, Durham, N. C.

International Congress on Diseases of the Chest.

The first international congress of this association will be held at Carlo Forlanini Institute, Rome, Italy, September 17-22. More than one hundred subjects will be presented. Detailed information may be obtained from Murray Kornfeld, executive secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The Western Association of Industrial Physicians and Surgeons

Invites all American Medical Association members to attend its meeting on Sunday, June 25th—day prior to the opening of the A. M. A. convention—from 9:00 A.M. to 5:00 P.M., in the Curran Theater, 455 Geary Street, San Francisco. An excellent program has been arranged.

The American Gynecological Society

Held an excellent meeting at The Greenbrier, White Sulphur Springs, West Virginia, May 11, 12 and 13, under the presidency of Dr. Joseph L. Baer of Chicago. There was an attendance of 212 members, guests and ladies, including thirty foreign guests. Dr. Frederick Irving of Boston was elected president for the coming year, with Dr. Edward L. King of New Orleans and Dr. Otto Schwartz of St. Louis as vice-presidents. Dr. Norman F. Miller of Ann Arbor was re-elected secretary and Dr. Robert Kimbrough, Jr., of Philadelphia, secretary.

The Diamond Anniversary meeting of the founding of the Society will be at the Waldorf Astoria Hotel in New York in May 1951.

New Books.

The following are some of the newer books placed in the Library of the Medical College of Virginia, Richmond, which are available to our readers under usual library rules:

Bockus—Postgraduate gastroenterology.
Boyce—Acute appendicitis.
Cheney—Medical management of gastrointestinal disorders.
Comroe, ed.—Methods in medical research. 1950.
Doyle—Handbook of obstetrics and diagnostic gynecology.
Einstein—Out of my later years.
Einstein—The world as I see it.
Fister—Manual of standardized procedures for spectrophotometric chemistry.
Franklin—Cardiovascular studies.
Gariepy—Saw-Ge—Mah (Medicine man).
Harris—Brucellosis. 2nd edition.
London—Sexual deviations.
Progress in clinical endocrinology. 1950.
Stieglitz—Geriatric medicine. 2nd edition.
Wolff—Electrocardiography.

Office Space Available.

Office space is available for two doctors in the corner building at 932 West Franklin Street, Richmond. Call 4-3380. (*Adv.*)

OBITUARIES

Dr. Frank Nicholson Mallory,

Dean of the medical profession in Brunswick County, died at his home in Lawrenceville on April 20th, after a long illness. He was sixty-nine years of age, a graduate in medicine from the Medical College of Virginia in 1906, and had been a member of the Medical Society of Virginia since that year. He was for a term president of the former Southside Medical Association and was coroner of Brunswick County for thirty-two years. He retired in 1949 after a practice of 41 years. His wife and three daughters survive him.

Dr. Edgar Lemon Sutherland,

An eye, ear and nose specialist of Lynchburg, was injured fatally on the morning of April 30th at the home of a sister in Willis when, while he was standing in the driveway, a rolling automobile pinned him against a building. Dr. Sutherland was a graduate of the University of Virginia in 1898 and had been a member of the Medical Society of Virginia since 1906. He was made a member of the "Fifty Year Club" of the Society at its 1948 meeting. He is survived by four sisters, his wife having died several years ago.

Dr. John Brooks Tuttle.

We have just learned of the death of Dr. Tuttle on September the 12th, 1949. He was seventy-one years of age and a graduate of the University of Virginia in 1896. He had been affiliated with the Medical Society of Virginia since 1902 and was a member of its "Fifty Year Club".

Dr. Herbert Grasty Dickie,

Of Roseland, died May the 7th at the age of 66. He was a graduate in medicine of the University of Virginia in 1907 and served his internship at Bellevue Hospital, New York. After practicing in several places, he returned to his home county in 1917 where he had since practiced. He was a Shriner and thirty-second degree Mason. He is survived by his wife and three children.

Dr. E. W. P. Downing.

At the regular quarterly meeting of the Northampton County Medical Societly held April 20, 1950, the following resolution was adopted:

BE IT RESOLVED that in the death of Dr. E. W. P. Downing, the Society has lost a most competent and faithful doctor and a friend to the public, who administered to them day or night for the past fifty years.

IT IS FURTHER RESOLVED that a copy of this be sent to the VIRGINIA MEDICAL MONTHLY, and to his family, and be recorded in the minutes of this Society.

Northampton County Medical Society
J. M. LYNCH
J. GATES GOODE
SHEPPARD K. AMES

Resolutions.

The Wise County Medical Society, at its meeting on April the 6th, adopted the following resolutions on the deaths of Dr. Harshbarger and Dr. Baker:

DR. CHARLES L. HARSHBARGER

Coronary occlusion ended the brilliant eighteen-year career of Dr. Charles Lester Harshbarger on February 21, 1950. No doctor within our knowledge has done more in our section in such a short time.

Our society gave him every honor within our power. For many years he was our secretary, then on the Board of Censors, and at his death was President.

He was a gentleman; a statesman in medicine; a surgeon of ability, and a friend of his fellowmen.

The Supreme Architect of the universe has promoted him we feel sure.

We feel our loss. Our hearts go out in sympathy to the fine widow and daughter he left.

ROBERT JONES
T. J. TUDOR

DR. WILLIAM AUGUSTUS BAKER

The Dean of our group, William Augustus Baker, age 87, passed away at his home at Big Stone Gap, on February 7, 1950. Two years ago he became a member of the "Fifty Year Club" of the Medical Society of Virginia.

For many years he was a horseback doctor and rode fine horses, and he responded to calls over a wide area, and in the colds of the mountains.

He had a fine pleasing personality, a high regard for ethics, and brought to his clientele the most up-to-date professional services of the general practician of his day.

Only four of the doctors who worked with him in the early horseback days still survive and only three of them are in active practice.

We bow in humble submission to the will of Him who doeth all things well and we shall remember fondly this good doctor who has gone on to be with the great doctor, St. Luke, and a host of others.

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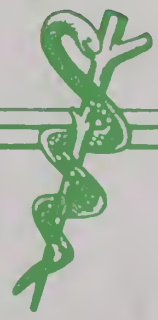

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*Orent-Keiles, E., and Hallman, L. F.: The Breakfast Meal in Relation to Blood-Sugar Values, Circular No. 827, United States Department of Agriculture, Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, Dec., 1949.

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GUEST EDITORIAL

The Sixth Revision of the International List of Causes of Death

IN THE adoption of the Sixth Revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death by the World Health Assembly in 1948, a significant forward step was taken in disease classification, making available for the first time a single list for the classification of both morbidity and mortality. The use of the same form for medical certification and the same method of classification by all nations will undoubtedly bring about better international comparability of medical and health statistics.

It is obvious that classification of data is essential to the quantitative study of facts or occurrences. As applied to the study of morbidity and mortality the arrangement must be both scientifically sound and practical for the purpose of statistical compilation. As some degree of uniformity in definition and arrangement is necessary, a *standard classification* of illness and death is essential.

The beginning and development of what is now known as the International Statistical Classification of Diseases, Injuries, and Causes of Death is quite remarkable. The Sixth Revision (1948) is an indirect descendent of a statistical classification proposed by Dr. William Farr, medical statistician in England in 1854. As late as 1893 no two countries in the world used exactly the same forms and methods for the statistical classification of causes of death. However, at a session of the International Statistical Institute held in Chicago in 1893 the eminent French demographer, Dr. Jacques Bertillon, presented on behalf of a special committee appointed for the purpose a draft of a classification for international use. This draft was adopted by several countries, and was recommended for use in the United States by the American Public Health Association in Ottawa, Canada, in 1898. It was further suggested that in order to keep abreast of scientific progress, the classification be revised every ten years. To carry out this proposal the French government has assembled successive conferences for the revision of the List of Causes of Death decennially since 1900. Continuous effort has been made to bring the International List more closely into line with advancing medical science and public health practices.

The Sixth Revision of the International List of Causes of Death was made under the auspices of the World Health Organization of the United Nations. Responsibility for compiling the Classification was given to a group of internationally recognized experts on health statistics, known as the "Expert Committee for the Preparation of the Sixth Decennial Revision of the International Lists of Diseases and Causes of Death". This committee reviewed and revised a preliminary draft of a proposed classification prepared by the "United States Committee on Joint Causes of Death," which had been tried out by a number of agencies in England, Canada, and the United States. The final draft made by the Expert Committee was accepted by the Sixth Decennial Revision Conference in Paris in 1948. It was then adopted by the first World Health Assembly in

Geneva, Switzerland in July 1948, and at the same time regulations were issued to guide the nations in its application.

The Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death consists of two volumes. Volume 1 includes the International List of categories and inclusions, three special lists for tabulation of morbidity and mortality, and a section on medical certification and rules for classification. Volume 2 is the Alphabetical Index to the List and is a useful working tool in coding.

Although the Sixth Revision differs radically from previous revisions in its scope and arrangement, it maintains the principles of the original list and is built upon that framework. Departures have been made, however, whenever it was necessary to secure a better arrangement of related categories, and for the expansion required to include in the List a morbidity classification as well as mortality.

As various *axes* of classification (anatomical site, etiology, infective agents, etc.) are wanted by the different branches of medicine, a practical system of classification necessitates many compromises and adjustments in order to provide a common basis for general statistical use. The arrangement of the Sixth Revision of the International List, according to its main groups, is in the following order: First, the diseases caused by well-defined infective agents; next, malignant and benign neoplasms; then, diseases of the endocrine system, and allergic, metabolic and nutritional diseases. Most of the remaining diseases, those of the respiratory, circulatory, digestive and genito-urinary systems, are arranged according to their principal anatomical site. Special sections are provided for mental diseases, complications of pregnancy and childbirth, diseases of early infancy, senility, ill-defined conditions, and external causes of injury. The system consists of a series of 3-digit numbered categories to which diseases, injuries, and deaths are assigned. Many of the 3-digit categories are further subdivided by means of a fourth digit for greater detail in classification. In the Detailed List there are 610 rubrics of diseases, 153 categories for the classification of external causes of injury, and 189 for injuries according to the nature of the injury. In the previous revision (Fifth, 1938) there were 200 principle categories.

The application of the Sixth Revision of the International List to morbidity and mortality data is relatively simple when only one morbid condition is given on the medical record. However, as an increasingly greater proportion of hospital reports, death certificates, and other medical records contain multiple diseases and causes of death, the selection of the primary cause becomes a significant factor for statistical tabulation. In the past, the primary cause was selected in various ways in different countries. In the United States the Manual of Joint Causes of Death published by the United States Bureau of the Census was used as a mechanical guide in the selection of the cause to be tabulated. With the adoption of the Sixth Revision of the International Classification in 1948, an agreement was made for a uniform method of selecting the underlying cause of death. This was brought about by means of a new form of medical certification, which is a part of the Standard Certificate of Death recommended by the World Health Assembly. This form, first used internationally in 1949, is designed to aid the attending physician or surgeon in reporting the train of events leading to death. It places upon him the responsibility for indicating the *underlying cause of death.* Accordingly, mortality statistics in the future should reflect medical opinion.

As might be expected, the drastic change to the new method of selecting the cause of death to be tabulated disturbs comparability with past mortality figures. The effects of the change can be studied by coding each death certificate according to the old classification as well as the new. Then by means of a "comparability ratio", a link is provided between compilations for the past decade and those of the present. These ratios

indicate only slight discrepancies for some causes of death but quite significant differences for others. In comparing the frequency of a disease now with twenty years ago, however, it should be remembered that one is not comparing the actual number of cases or deaths now with the former period; one is really comparing the frequency with which a particular term was used to describe the disease entity by persons differing in medical education and outlook over a period of twenty years.

Against the many difficulties encountered in the change from the former system to the new is the outstanding advantage—mortality statistics will represent the opinion of the certifying physician, the person in the best position to determine the *underlying cause of death.* Accordingly, upon the physician is placed a great responsibilty and opportunity for making mortality statistics of maximum value to medical research and public health.

Anna R. Thomas

Editor's Note: Miss Thomas is Supervising Statistician of the Bureau of Vital Statistics, State Department of Health, Richmond.

Bibliotheca Obstetrica

Soranus of Epheusus, 2nd Century

DIE Gynäkologie des Soranus von Ephesus Beburtshilfe, Frauen-und-Kinder Krankheiten, Diätetik der Neugeborenen. Ubersetst von Dr. Phil. H. Lüneburg. München. J. F. Lehmann. 1894. lx, 173, p. 23.4 cm.

In Soranus, ancient obstetrics and gynecology reached its highest state of perfection. He studied in Alexandria and practiced in the Rome of Trajan and Hadrian. He was the greatest of the Methodists, but according to Allbutt was too great a physician to be enthralled in any sect. Little that he wrote exists today. Happily, as Allbutt expresses it, he was one of the best-robed men of his age, and his work has been reconstructed by Ilberg and Valentine Rose. The familiar birth figures of the Middle Ages descended from him through Moschion. It is generally thought that he performed version on the living child, an operation that was lost in the Dark Ages and rediscovered by Paré and Gillemeau.

HEPATIC AMEBIASIS; DIFFICULTIES IN DIAGNOSIS†*

WILLIAM A. READ, M.D.,**
Newport News, Virginia,
and
HARRY NUSHAN, M.D.,‡
Kecoughtan, Virginia.

Amebic involvement of the liver is the commonest complication of intestinal amebiasis and is variously stated to occur in from five to seventeen per cent of all cases.[1,2] If autopsy statistics alone are considered, the percentage is much higher, ranging up to fifty per cent. Craig[1] is convinced that there are many instances of amebic liver abscess in the United States which are undiagnosed during life, basing his opinion on unsuspected cases he has seen at autopsy. The general incidence of amebiasis may be reasonably expected to increase following the return of thousands of American veterans from highly endemic areas of amebic infestation.

Early diagnosis of this condition, with institution of appropriate treatment, will practically eliminate fatalities and greatly decrease morbidity. In Klatshin's[3] series of 69 cases of hepatic amebiasis in military personnel in India there were no deaths and none required aspiration or surgical drainage. This is a very unusual record; a combination of early diagnosis plus the fact that his patients were usually seen soon after the onset of their illness, made it possible. In Ochsner and Debakey's collected series[2] the total mortality was 30.8 per cent, of those treated with emetine 9.1 per cent, and in their own series O. Craig, writing in 1944, felt that even under good treatment conditions, mortality would not be less than 20% if multiple abscess cases are included in the statistics.

The clinical picture of amebiasis of the liver has been described in many excellent articles in the last decade.[2,3,4,5,6,7,8,9] Fever, liver pain, leucocytosis and X-ray evidence of elevation and fixation of the diaphragm, are cardinal points stressed by most of these authors. A history of past dysentery or intestinal symptoms at the time is often absent. It is frequently impossible to demonstrate parasites or cysts in the stool. Many cases are atypical and do not present the clinical findings until late.

It is the purpose of this paper to present four cases of hepatic amebiasis, all seen and followed by the authors, who presented unusual diagnostic difficulties. Discussion will be limited to problems concerned with diagnosis. No attempt is made to cover details of treatment or evaluate recent drugs, such as chloroquine, which may be superior to emetine in this condition.[16,17,18]

Case I.—R. J. G. This 34 year old colored railroad worker was first admitted to the Veterans Administration Hospital on May 27, 1948. He stated

Fig. 1—Case 1—RJG. Elevation of the right diaphragm. This appeared for the first time four months after the onset of symptoms. Several previous X-rays showed no elevation.

*Read at the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

†From the Medical and Surgical Services, Veterans Administration Hospital, Kecoughtan, Virginia. Sponsored by the VA and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

**Consultant in Internal Medicine, VA Hospital, Kecoughtan, Virginia.

‡Chief, Medical Service, VA Hospital, Kecoughtan, Virginia.

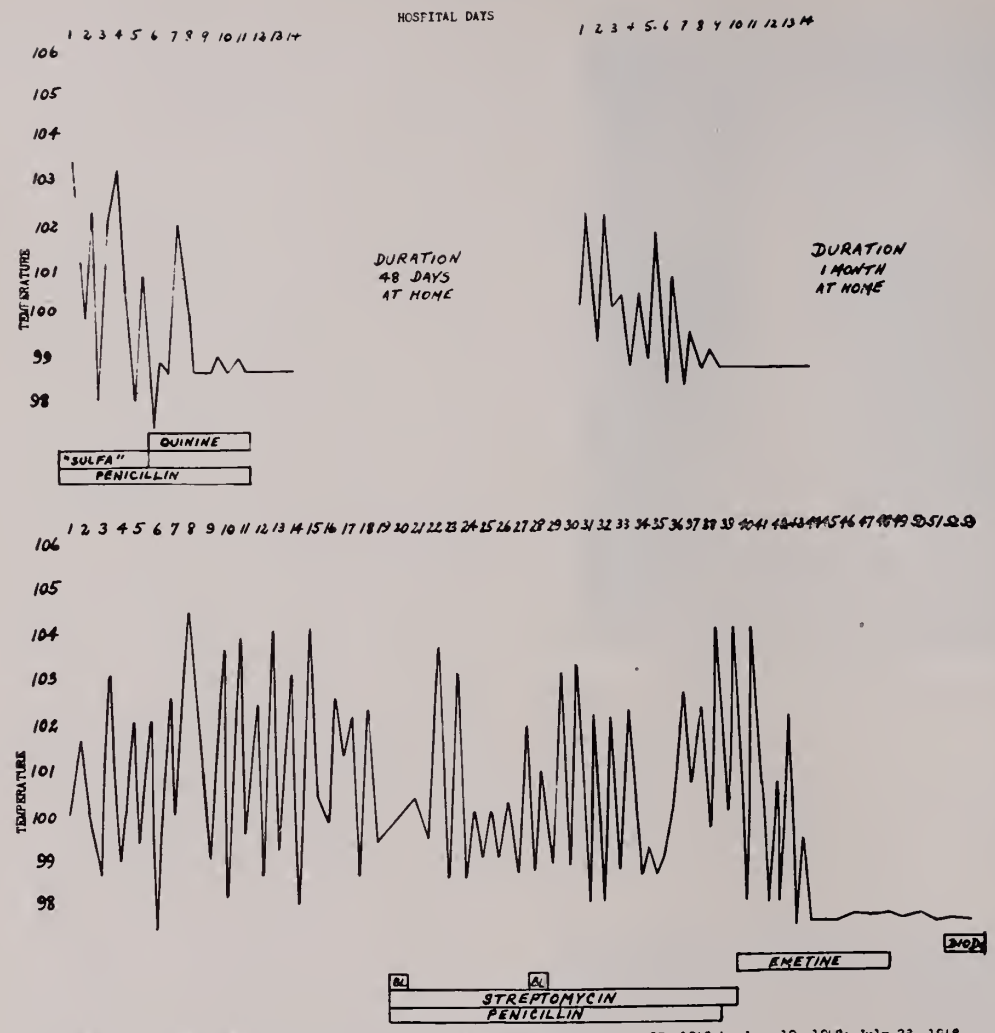
Fig. II—Case I—RJG. Return of the right diaphragm to a normal position. Therapy had been begun forty days previously.

that five days prior to admission he felt feverish and went home to bed. The next day he had several shaking chills. Fever and chills continued. He was admitted to the G.U. Service with a diagnosis of pyelitis. The physical examination was entirely negative. His WBC ranged from 16,500 to 8,000 at discharge. X-ray of the chest, KUB plate, and several examinations for malarial and intestinal parasites were negative. He received penicillin and sulfadiazine, and later quinine, but fever persisted until the 8th day. He was discharged with a diagnosis of fever of undetermined origin.

His second admission was on July 28, 1948. He stated that he had felt well since leaving the hospital and had gained 20 lbs. in weight. Three days prior to admission he developed sharp epigastric pain, worse after meals, associated with chilly sensations and sweats. He also had an unproductive cough and hot flashes. Physical examination again was entirely negative and he rapidly became asymptomatic. Fever persisted for 8 days and then the temperature became normal, without any specific treatment.

The third admission was on September 11, 1948. He stated he had returned to work but had not felt well since his discharge one month before and had continued to have night sweats. Three days preceding this admission, he was taken with rather severe epigastric pain radiating to the back. This pain continued to be intermittent but not severe. There were no other symptoms, except chills, fever, and sweats, similar to the two previous admissions. Examination revealed inconstant tenderness in the right upper quadrant of the abdomen and variable response to bimanual compression of the liver. All types of laboratory tests and comprehensive X-ray examinations were not remarkable, except that leukocytosis ranged above 20,000. At times he would have moderate tenderness over the liver; at other times, absolutely none. The surgical consultant did not feel there was enough evidence of right upper quadrant pathology to warrant exploration. During the following month he became gravely ill with spiking temperatures to 105°, drenching sweats, and marked loss of weight. On October 20th, 40 days after admission and 5 months after his initial symptoms, a complement fixation test for amebiasis was reported as positive. He was immediately started on emetine therapy and in four days the temperature was normal and he felt greatly improved. On October 28th, for the first time, X-ray examination showed elevation of the right diaphragm but by November 30th this had receded to a normal position. In addition to emetine, he received a course of diodoquin and carbarsone. Three months after discharge he was readmitted for a checkup and found to be in excellent condition, having gained 40 lbs. in weight. He was given another course of emetine and diodoquin. Six months later he continued to be in excellent health.

Comment: In this case, there was an interval of 5 months between the onset of symptoms and institution of specific treatment. During this time liver tenderness was never prominent and was usually absent, even with bimanual compression, and X-rays showed no elevation of the diaphragm. There was never diarrhea or any past history suggestive of amebic dysentery. The complement fixation test was positive and of great value. It is interesting that on two occasions the fever and symptoms subsided spontaneously without specific treatment. It is also noteworthy that medical treatment alone effected a cure, with recession of the diaphragm to its normal position.



Case I RJG Age 34, Negro Male, Hospitalized at VA Hospital, Kecoughtan, Va., May 27, 1948 to June 10, 1948; July 23, 1948 to August 11, 1948; September 11, 1948 to December 3, 1948.

*Case II**.—J. S. This 37 year old white night watchman noticed chilly sensations and fever while at work in March, 1946.

His past health had been excellent, except that he had occasional chills and fever in the Spring for many years, which he thought were due to malaria. He had lived only in North Carolina and Virginia, and recalled no attacks of diarrhea.

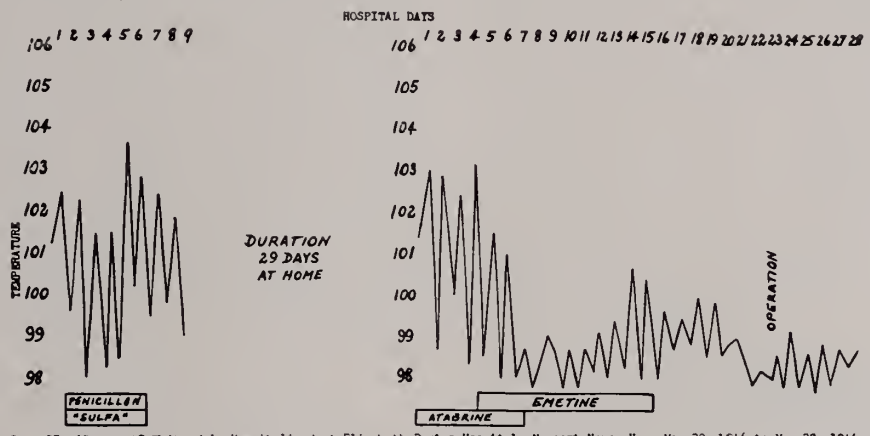
He continued to work in spite of chills, fever and sweats until April 21st. An attending physician had made various diagnoses, including malaria and undulant fever, and he had received courses of sulfadiazine and atabrine without benefit. He was finally admitted to the Elizabeth Buxton Hospital on May 20th, 1946, for further study. Examination revealed an acute and chronically ill man with obvious marked loss of weight. Physical examination revealed no other abnormal findings. There was absolutely no liver tenderness, either by palpation below the right costal border, bimanual compression of the liver, or fist percussion. This was repeatedly checked by one of two consultants who saw him, as amebic abscess was considered in the differential diagnosis. Laboratory work, including agglutinations and blood cultures, was negative except for a leukocytosis between 11,000 and 18,000. X-ray of the chest on two occasions showed no elevation of the diaphragm. He received a course of penicillin and sulfadiazine but continued to run a spiking temperature in the after-

*Included through the courtesy of Dr. C. P. Jones, Jr., Newport News, Virginia.

noon, followed by drenching sweats, and was discharged on the 8th hospital day.

Approximately two weeks later he was suddenly seized with sharp knife-like pain in the right lower chest. The chest was strapped by his wife, with marked relief. He later noticed slight swelling over the right lower costal margin and soreness over the region of the liver. Chills, fever, and sweating persisted and he was admitted to Duke University Hospital on June 26, 1946.

Examination showed great emaciation (weight loss 45 lbs.). There was marked liver tenderness with fixation and elevation of the right diaphragm. There were moist rales at the base of the right lung.



Case II JS Age 37 White Male Hospitalized at Elizabeth Buxton Hospital, Newport News, Va., May 20, 1946 to May 28, 1946; at University Hospital, Duke University, June 26, 1946 to July 23, 1946.

On the 5th hospital day he was started on emetine therapy and in two days his temperature fell and the pain almost disappeared. X-ray examination, following thorotrast, localized a large abscess in the right posterior portion of the liver. He had a slight recurrence of fever on the 14th day, and on the 18th day aspiration, through the 9th interspace in the posterior axillary line, yielded 1,100 c.c. of pea soup green non-odorous pus. Culture of this material showed no growth and no amebae were found. He was discharged feeling much improved and at the present time is working and in good health.

Comment: The localizing symptoms and signs of amebic liver abscess were absent in this case until three months after onset. There was no diarrhea or previous history of dysentery. Failure to make an early diagnosis resulted in a long period of disability and necessitated aspiration of the abscess before final cure. If, in addition to looking for signs of liver tenderness and elevation of the diaphragm, a complement fixation test for amebiasis had been done, it is likely that proper treatment would have been started earlier.

Case III.—J. M. P. This 24 year old colored college student was admitted to the Veterans Administration Hospital on September 20, 1948. Two days previously he developed dull aching epigastric pain, accompanied by fever and sweats. The pain was continuous but not severe. There was no nausea, vomiting, or diarrhea.

The past history revealed a previous admission to this hospital in 1946 with a complaint of pressing pain in the umbilical region, coming on ½ hour after meals and relieved by stretching. The general physical examination at that time was negative except for slight tenderness in the epigastrium. Laboratory studies were normal, including a negative stool examination for parasites. X-ray of the chest and G.I. Series was negative. He became asymptomatic and was discharged with a diagnosis of functional indigestion.

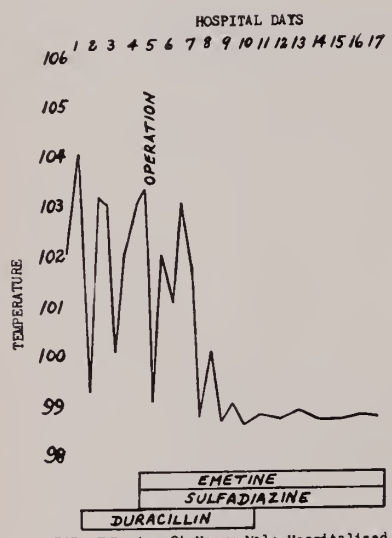
In 1945, while in the Phillipines, he developed diarrhea and was treated for amebiasis with emetine. He made a prompt recovery and has had no diarrhea since.

Physical examination revealed the abdomen to be flat and soft except in the epigastric region, where there was definite rigidity and exquisite tenderness. The tenderness was definitely worse to the left of the midline. The remainder of the examination was entirely negative.

Urinalysis was negative; the initial WBC was 9,800. Three stool examinations were negative for parasites or cysts.

He was transferred to the Surgical Service with

the diagnosis of an acute abdomen, type undetermined. During the next four days his temperature, in spite of adequate penicillin therapy, spiked to over 103° daily and WBC rose to 13,750 with 84% polys. Because of the suspicion of amebic abscess AP and lateral films of the diaphragm were made, and repeated, and were negative. On the 4th hospital day a fullness could be palpated in the epigastrium and it was felt unwise to delay surgery further.



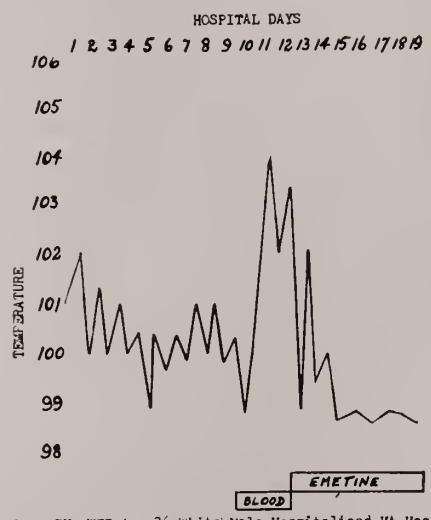
Case III JMP Age 24 Negro Male Hospitalized VA Hospital, Kecoughtan, September 20, 1948 to October 26, 1948.

On opening the abdomen the left lobe of the liver extended nearly to the umbilicus and an abscess within it was pointing slightly to the left of the midline. Aspiration resulted in return of 10 c.c. of dark red paste-like material. Several adjacent areas, which appeared involved, were left undisturbed. The abdomen was closed and the patient immediately started on emetine. The temperature returned to normal on the 3rd post-operative day and remained so. He was discharged asymptomatic on the 36th hospital day, having received 17 grs. of emetine in two courses. Examination of the pus removed revealed fibrin and blood and some leucocytes, but no amebae were seen.

Comment: In this case, amebic abscess was suspected but it was felt unwise to delay operation because of the possibility of a ruptured peptic ulcer. In retrospect, the presence of an enlarged tender liver, fever, and past history of amebic colitis, justified the immediate trial of emetine which would have clarified the situation. The complement fixation test for amebiasis was also indicated. The long interval between the attack of amebic dysentery and the onset of liver involvement has been noted by many writers.[1,2] It is interesting to speculate on the possibility that the hospitalization in 1946, with epigastric pain and tenderness, represented an earlier amebic hepatitis with spontaneous cure.

Case IV.—W. T. B. This 36 year old white waterman was admitted to the Veterans Administration Hospital February 1, 1949. He gave a history of being in a fight three weeks previously, at which time he lost considerable blood, and shortly thereafter he developed soreness in the right upper abdomen. This persisted and was accompanied by chills, fever, and sweats. At the onset he had several watery bowel movements for two days. The past history showed excellent health. He served in the European Theatre and had had no diarrhea.

On physical examination he appeared pale and acutely ill with a temperature of 102°. The sclerae were muddy but there was no jaundice. The abdomen was soft and slightly distended. The liver was enlarged two finger breadths below the costal margin and exquisitely tender. Compression of the right costal margin produced extreme pain.



Case IV WTB Age 36 White Male Hospitalized VA Hospital, Kecoughtan 2-1-49 to 3-5-49.

Laboratory work showed 52% hemoglobin, 3,200,000 RBC and WBC 15,200, with 87% polys. X-ray of the chest and G.I. Series was negative.

He continued to be acutely ill, with temperatures ranging up to 104°. A proctoscopic examination revealed two small ulcers in the rectum but no amebae could be identified in the scrapings. On the 8th hos-

pital day the Roentgenologist reported elevation of the anterior two-thirds of the right diaphragm consistent with subdiaphragmatic abscess. The patient was referred to Surgery for exploratory laparotomy. On the following day, however, a conference was held with the Branch Medical Consultant of the Veterans Administration, and it was decided to defer surgery pending a trial with emetine therapy. The complement fixation test for amebiasis was returned positive on the same day. Following emetine therapy, all symptoms abated. The temperature returned to normal in 48 hrs. and remained so and he was discharged asymptomatic on the 33rd hospital day.

Comment: This case clearly illustrates the high index of suspicion necessary to avoid over-looking this disease. The history of trauma also brought up the possibility of rupture of some viscus with secondary abscess or hemorrhage. The decision to delay exploration while observing the effects of a few days of emetine therapy took into consideration the great hazard of surgery in amebic abscess without preliminary emetine therapy. Again, the value of the complement fixation test was demonstrated. The possible role of trauma to the liver, as in this case, in precipitating hepatic amebiasis has been commented on by others. Alcoholic over-indulgence is also a well known predisposing factor.

Discussion

Amebiasis of the liver may present great difficulties in diagnosis, even when that condition is considered in the differential diagnosis. This was particularly true in Cases I and II of this series where localizing signs over the liver were absent or inconspicious for some months. Naturally, with continued septic temperature and leukocytosis, these patients received full courses of antibiotices and sulfonamides. When these measures fail to influence the fever and careful search indicates no obvious focus of pus, amebic abscess must be considered, especially if the patient is a male between the ages of 20 and 50. An exactly similar case was reported by Noehren.[10] There was unexplained fever and leukocytosis without liver tenderness. Diagnosis was established two months after admission when X-ray showed elevation of the right diaphragm. It is in this type of case that the complement fixation test for amebiasis is particularly apt to be valuable. Craig[1] first published the technique of this test in 1929. Its usefullness was limited by the difficulty in preparing an efficient antigen, but recently much of this difficulty has been overcome.[11,12] Terry and Boziecvich[13] published 13 cases in which the test was done, in 10 of which it was positive. In 2 of the 3 false negatives a subsequent test, with potent antigen, gave positive results. There were no false positives. Although it should never be a substitute for careful search for the parasite, this test has an important place in the diagnosis of hepatic amebiasis.

Cases III and IV presented more or less the differential diagnosis of the acute abdomen. Cholecystitis, ruptured peptic ulcer, sub-diaphragmatic abscess, and ruptured viscus were the diagnoses most considered. Walters *et al.*[14] stressed the fact that the abscess may rupture as the initial symptom and produce an acute emergency. In these cases early diagnosis is essential to prevent a high mortality.

It may become necessary in suspicious cases to use emetine as a therapeutic test. Decrease in pain and fever is usually dramatic in two to four days. This is due to the high concentration of the drug in the liver as shown experimentally by Parmer.[15] If a large abscess has formed, aspiration will be necessary following emetine.

In three of the four cases presented, medical treatment alone was sufficient, since Case III had a small abscess which was aspirated only for diagnostic purposes and would certainly have healed with emetine therapy.

Summary and Conclusions

1. Four cases of hepatic amebiasis illustrating difficulties in diagnosis are presented.
2. Consideration of this disease in unexplained fevers with leukocytosis uninfluenced by antibiotics, and in acute abdominal conditions of the right upper quadrant, is stressed.
3. The value of the complement fixation test for amebiasis is emphasized.

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DISCUSSION

DR. CHARLES M. CARAVATI, Richmond: This is a very important subject and one which is being overlooked. We are indebted to Drs. Read and Nushan for bringing it to our attention. As emphasized by them, the presence of intermittent fever, leukocytosis, with no other obvious cause, should make us look for amebiasis. The symptoms and signs of typical amebiasis are familiar to all of us but the obscure cases emphasized by them are the ones for which we should be on the alert.

I should like to stress several points. First, the search for the parasites should be thorough and should consist of these procedures: careful proctoscopic study with immediate search of the scrapings, repeated examinations of warm stools and thorough search of several watery stools obtained after saline purgatives or enemata.

A useful clinical finding can be elicited by means of fist percussion of the liver. Many normals will complain of pain after the trust, but, if the discomfort continues for as long as a couple of seconds and radiates toward the precordium, it suggests that the liver is the site of active pathology.

Whenever an abscess of the liver is suspected and aspiration seems indicated, emetin should be administered before the puncture. It adds greatly to the surgical effectiveness. The aspirate obtained seldom reveals the vegetative ameba, as commonly there is complete autolysis of the parasites by enzymatic action.

When the amebiasis is confined to the right colon and particularly to the cecum, abscess of the liver is probably more common; and, when it does occur, it is most often in the right lobe, as this sub-division receives practically all of the blood from the right half of the large bowel.

(Slides were shown illustrating the rather characteristic deformity of cecal ameboma, resulting from cecal amebiasis of quite long standing). Even after adequate treatment the deformity may persist for several weeks.

One practical point about the complement fixation test is that at present the test will be performed for any clinician by the Communicable Disease Center, U. S. P. H. S., Atlanta, Georgia.

A positive complement fixation indicates the presence of parenchymal damage due to amebiasis. A negative test is not as helpful.

I wish to thank Drs. Read and Nushan for emphasizing this important subject and to compliment them on the manner in which they presented it.

DR. DOUGLAS CHAPMAN, Richmond: There is one thing on which I want to comment, and that is the occurrence of heart complications after the giving of emetin. I think it is important to get an electrocardiogram on these people before they leave the hospital, because of the possibility of heart block.

Again, I have heard it said that patients that have diarrhea seldom have abscess, but if patients are constipated then they have abscess.

DR. JOHN TAYLOR RANSONE, Newport News: I should like to ask if any of these patients give symptoms which might be ascribed to neurotic or psychic disease.

DR. READ, closing discussion: I should like to thank Dr. Caravati for his very generous discussion of this paper. In answer to the doctor's question concerning cardiac involvement from the use of emetine, it is my belief that its toxicity has been much over-rated. Hundreds of patients were treated in India with emetine by American doctors in the last war and no sericus complications were noted. It is important to keep the patient at rest during emetine therapy and to give a good rest period between courses.

Answering Dr. Ransone's question, I do not believe that amoebic abscess of the liver will often be confused with functional disease. There will usually always be some fever and some elevation of the leucocyte count if the patient is carefully observed. In my experience the indefinite abdominal pains following infectious hepatitis are much more apt to cause difficulty in this regard.

MEDICAL-DENTAL RELATIONS*

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Williamsburg, Virginia.

Just what are medical-dental relations? What conceptions do the physicians and dentists scattered throughout the United States have when they hear the term medical-dental relations? If we are going to be perfectly honest with ourselves we can readily come to the conclusion that the vast majority of physicians and dentists have a very vague conception of this term. Probably one of the outstanding reasons for this lack of understanding in regard to the term medical-dental relations is our improper concept of disease treatment. Today's modern and proper concept of disease treatment is one which recognizes the treatment of disease as it affects any part of the body, whereas, today's improper concept of disease treatment is one which is somewhat similar to this but one which has certain reservations; one which has a tendency to ignore or overlook certain parts of the body in the treatment of disease. In order to demonstrate that most of us do have an improper concept of disease treatment, I am going to ask you to use your imaginations momentarily while I will assume to present a question to, let us say, all of the physicians in the United States, instead of the small group of physicians who might be reading this article. The question is simply this: "What might be the oral manifestations in the disease commonly known as diabetes mellitus?" Now, then, it won't require any great stretch of our imagination to realize that thousands upon thousands of the answers which we would receive in reply to that question, would be, to say the least, quite erroneous. Continuing in this same vein, let us ask all of the dentists a question. To the dentists—"What might be the general systemic manifestations of the disease commonly known as diabetes mellitus?" We can readily conclude that the character and quality of the answers which we would receive in reply to that question would perhaps be parallel or equivalent to the character and quality of the answers we received from the physicians. These two questions which I have just presented, together with our mythical answers, have a tendency to dramatically illustrate two things: (1) most of us do have an improper concept of disease treatment; and (2) most of us are exclusively interested in our own particular sphere of the medical arts only. One of the outstanding factors in our misconception of disease treatment is the vast gap which exists between the medical and dental professions; the almost utter lack of cooperation; the almost utter lack of harmony. In order to demonstrate to you that such a lack of harmony does exist I am going to use my same system of interrogation. I am going to ask more questions. Question No. I: To the physician: "In your diabetic case do you feel as though you have any relation to the dentist? Would you consult him?" Question No. II: To the dentists: "In your examinations of the oral cavities of your patients, do you conscientiously look for what might be oral manifestations of the disease diabetes mellitus so that you might be in a position to aid some potential diabetic by consulting some physician in regard to diagnosis and treatment?"

The answers to both of these questions should be yes, but, again, it won't be necessary to stretch our imagination to readily conclude that the vast majority of these answers will be negative. This negativeness, this lack of cooperation, this lack of harmony, is more apparent on the educational front of these two professions than anywhere else. Dr. Crawford, the Dean of the Dental School of the University of Minnesota, states that we have glaring examples of this lack of cooperation on the educational front of these two professions in matters pertaining to professional relations, professional society activities, governmental services and educational problems. Probably one of the strongest contributing factors in this divergence on the educational front is the difference in the educational systems of these two professions. For example, we know that the premedical course is of longer duration than the predental course. We know that in the past, at least, the basic sciences were taught more thoroughly in the medical schools than they were in the dental schools, and we know that the medical student must

*Presented at the meeting of the Williamsburg-James City County Medical Society, November 21, 1949.

spend at least a year's time in some hospital as an intern before he may qualify as a *bona fide* licensed physician. While we know these things we know certain other things too in regard to these educational systems. For example, we know that the highest type of under-graduate course in, let us say, gross anatomy, given in the highest type of medical school, does not produce an anatomist. We know that an A grade under-graduate course in physiology given in an A grade medical school does not produce a physiologist. We are cognizant of the fact that anatomists and physiologists are produced through the mediums of post-graduate experience and post-graduate education. This trend of thought has a tendency to show us our differences in our under-graduate days and post-graduate days. In our under-graduate days we learn to study, whereas, in our post-graduate days we study to learn. This trend of thought also has a tendency to lead us to our imperfections. For example, we know that no man living today can thoroughly master all of the medical arts. No man will live long enough to even read the vast array of material which has been written on these subjects. Consider the volume upon volume which has been written on diabetes alone. Therefore, it quite naturally follows that, in a broad sense, most of us are, in reality, medical arts specialists, and I think that it behooves us as broad medical arts specialists to take advantage of our colleagues' knowledge through the medium of cooperation. One dentist in the past quite aptly expressed one type of cooperation. This dentist had been asked to address a meeting, a mixed group of physicians and dentists, and he had this to say, "If the dentist would just stay out of the antrum, the eye, the ear and the nose and throat, the physician would be very happy", and, he continued, "If the physician would just refrain from treating trench mouth and condemning perfectly good teeth, the dentist would be very happy." This dentist expressed one type of cooperation, a rather peculiar type of cooperation, a type of cooperation which is brought about by the process of having certain members of each of these professions refrain from doing certain things. Now, then, what might another type of cooperation be? Another type of cooperation might be one in which the members of both of these professions did certain things which were mutually agreeable—for example, in a case of diabetes mellitus. Some of you at this point may wish to refresh your memories in regard to this disease. Some of you might even mentally ask the question, "Just what might be the oral manifestations of diabetes mellitus?" You have perhaps noted that I have used the expression "might be". "Might be" in this particular instance is a very apt expression because competent medical authority does not recognize any specific symptom for this disease. Dr. Meekins, in his text-book entitled the Practice of Medicine, unequivocally states that we do not have any specific characteristic sign for this disease. While this is undoubtedly true, it is equally true that we do have certain oral manifestations which frequently accompany this disease. When we consider this fact and we co-relate it with the possibility that there may be as many as a million unknown diabetics, we become quite justified in expecting the dentists to do everything possible to aid in the detection of this disease. Under these circumstances, oral manifestations become a subject of prime importance. The oral manifestations which may accompany a case of diabetes mellitus are: (1) the gums are inflamed because of the lowered resistance of the diabetic. Gingivitis alone may exist, but as a general rule we have ample evidences of periodontoclasia. The gums are swollen, hypertrophied and detached from the roots of the teeth. The color of the gum tissue may vary from a deep red to a purple or may even be cyanotic in appearance. (2) Radiographically the bone of the diabetic presents a generalized osteoporosis with an enlargement of the medullary spaces. The interdental septums are resorbed and we have an abnormal amount of resorption in the boney tissues at the bifurcation of the roots of the teeth. (3) In the untreated diabetic we have a very rapid formation of salivary calculus. The mouth is dry, the tongue is enlarged and looks raw and we may detect an odor of acetone. In considering these oral manifestations which I have just presented, it is well to keep in mind that we may have these same manifestations in the non-diabetic; however, since the diabetic is very prone to infections, periodontoclasia will be more marked in the diabetic than in the normal individual. Periodontal pockets will be deeper and periodontal abscesses will be more apt to form. In order to bring out the relationship between the physician and dentist in the treatment of diabetes, I am going to point out certain precautions that should be taken before any dental surgery is attempted:

(1) The metabolic condition of the patient should

be appraised and controlled by a physician.

(2) Local anesthesia should be used although nitrous oxide oxygen is safe.

(3) Adrenalin should not be used because adrenalin is a direct antagonist of insulin and would raise the blood sugar.

(4) Because the diabetics are very prone to infections we should establish and maintain a chain of asepsis.

(5) We should avoid all unnecessary trauma because the diabetic heals very slowly and gangrene may result.

(6) In extensive dental operations the work should be done in several stages.

In addition to this it is the dentist's duty to inform the physician about any suspected diabetic case, whereas, on the other hand, it is the physician's duty to inform the dentist about such conditions. He should also caution the patient about the need for added dental attention. This is important. Good teeth are an asset to a diabetic because of the coarse diabetic food, while bad teeth are a liability since any form of infection makes diabetes worse. The first thing that we should do is extract all teeth which cannot be saved. The time for the extraction should be set by the physician. The best time for the extraction of teeth in diabetic cases is on the descending portion of the blood sugar curve. This will vary depending upon the type of insulin used, the time insulin is used, and the time relationship between the extractions and meals. The ideal time for the extraction of these teeth is one and a half hours to three hours after breakfast and after the administration of insulin. I have perhaps proven to your satisfaction that there is, or should be a direct relationship between the physician and dentist in the treatment of diabetes. We should have the same type of cooperation in many other pathological conditions. In recent years socially minded people are becoming more and more concerned about medical and dental practices as they are related to medical care. Among other things the microscope and microtome stimulated an awareness of the social and economic factors in health and disease which cannot be possibly analyzed by the sole application of these same instruments. These instruments and other instruments of precision do, in their limited mechanical way, focus the attention of the observer on a segmented microcosm. But human beings cannot be taken apart in such a way that each of the parts can be studied exclusively without regard for the other parts. Psychiatrists are well aware of this fact. Progress demands that the oral medical specialist become familiar with the progress of medicine. Progress demands that the oral medical specialist study the life giving and life saving devices which are being produced today at a more rapid rate than ever before. Progress demands that the other medical arts specialists learn something about dentistry and view the practice of medicine with the same spirit as the Mayo brothers. One of the Mayo brothers once had this to say, "80 per cent of all disease originates above the neck". There may be a tendency on the part of some people to ignore this statement, but it is a certainty that people engaged in the practice of the medical arts cannot afford to take any statement of the Mayo brothers of Rochester, Minnesota, too lightly. If we stop to analyze Dr. Mayo's statement, we can readily come to the conclusion that the chances are very great that this statement of Dr. Mayo's is a statement of pure simple fact. Let us pause for a moment to analyze Dr. Mayo's statement. First of all, we know that the seriousness of any disease caused by a specific micro-organism is dependent upon three factors: (1) The number of micro-organisms; (2) the virulence of the micro-organisms; and (3) the susceptibility of the hosts. The first two factors, the number of micro-organisms and the virulence of the micro-organisms, are self-explanatory. The third factor, the susceptibility of the hosts, is partly dependent upon one of two things: (1) the ease of invasion of micro-organisms, and (2) the difficulty of invasion of micro-organisms. In order to prove Dr. Mayo's statement, let us ask ourselves this question: "Where in the human body do we find the easiest entrance for the successful invasion of micro-organisms?" The answer is quite apparent. The oral cavity with its contained structures is in intimate relation with the external environment and, therefore, these structures are subjected to mechanical, chemical and bacterial insults which rarely, if ever, are experienced by other body cavities. This makes the oral cavity very vulnerable to disease. For this reason, the oral tissues are very sensitive indicators of the general health status of the individual and any changes in these oral tissues are often subclinical evidences of disease processes in other organs of the body.

Oral symptomatic manifestations of nutritional deficiencies, endocrine and gastrointestinal disturb-

ances, certain of the anemias and blood dyscrasias are quite common.

The importance of the oral tissues as indicators of the general health status of the individual has not been sufficiently appreciated. The average physician has traditionally neglected not only his own mouth but also the mouths of his patients. The dentist is very often guilty of the former but rarely guilty of the latter.

This statement which I have just made in regard to the oral hygiene of the average physician is not original on my part but—strange as it may seem—is the statement of a very prominent physician. Perhaps I should say that it is the statement of a very prominent oral medical specialist. It is the statement of Lester W. Burket, M.D., D.D.S., Professor of Oral Medicine at the Thomas W. Evans Institute and Museums, School of Dentistry, University of Pennsylvania and Professor of Oral Medicine, Graduate School of Medicine, University of Pennsylvania.

All that I have said on medical-dental relations refers to what these relations were in the past and what they are to a great extent today.

What will be the medical-dental relationship in the future? In order to understand that question let us consider the general trends in medical-dental relationship today. In 1948 the American Medical Association and the American Dental Association appointed a joint committee to promote inter-relations of the two professions in education and practice. The Council on Education and Hospitals of the American Medical Association advocated the inclusion of dental departments in hospitals throughout the country, a measure which is supported and emphasized by the Commonwealth Fund in its report on hospital care. The Council on Education of the American Dental Association also supported the measure by setting up standards for hospital-dental internships and residencies. Part of the Commonwealth Fund report exhibited considerable foresight through a realization that circumstances would prevent the immediate application of the highest type of dental services in many instances because of budget situations and other obstacles. The Commonwealth Fund stated in its report: "Dental examinations, directed toward the discovery and diagnosis of dental and oral infections which may be related to systemic diseases should be made of all patients admitted to hospitals except when the physician in charge pronounces this procedure unnecessary or impractical."

In 1949 the Rhode Island medical and dental societies agreed that in many instances the joint services of the physician and dentist would hasten the recovery of patients and in some cases prolong life. These societies planned a state wide program of medical-dental relations. The principal points of their program were: (1) The establishment of closer geographic and intellectual relations between medical and dental schools so that under-graduate students as well as practitioners in both professions will have a better understanding of, and be more sympathetic to the problems of their allied practitioners; (2) the improvement of hospital dental departments so that they will be equal to the medical departments in teaching, research and services; (3) the development of courses of instruction for practicing physicians and dentists, these courses to be given under the joint auspices of the two societies and the extension division or medical sciences departments of a University or School of Liberal Arts; (4) provision by the medical and dental society of scientific programs on which dentists may collaborate with physicians in such fields as pediatrics, nutrition and cardiology in order that the dentists may acquire practical knowledge which will enable them to serve their patients more effectively; (5) publication in the journals of both professions of more material of common interest to members of both groups; (6) promotion of public health programs under the joint sponsorship of medical and dental societies.

The Rhode Island State Dental Society has entered the initial stage of the program by providing a course of lectures for physicians and dentists under the auspices of Brown University.

The writer can perhaps rapidly summarize everything which has been written in this article by merely stating that there is a great need for cooperation between the medical and dental professions and a great need for the education of these two professions in scientific matters which are common to both professions.

Before concluding this article, the writer wishes to state that he is indebted to E. M. Bluestone, M.D., of New York City, for part of his information and also to Lester W. Burket, M.D., D.D.S., of the University of Pennsylvania.

In conclusion, it would perhaps be appropriate to state that in the classics of literature we came across the phrase, "I came, I saw, I conquered". It would

be a splendid thing if at some future date, while thinking of the achievements of our own profession in matters concerning medical-dental relations, we could truthfully paraphrase this statement about such achievements: "You came, you saw, you conquered."

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Portrait painted by Abbot, engraved and published by W. Skelton, London, June 1, 1792.

Thomas Denman, the 2nd son of an apothecary, was born at Bakewell, June 27, 1733. His son, Thomas, became Lord Chief Justice of England. One of his twin daughters married Sir Richard Croft and the other Dr. Matthew Baillie.

When Denman was 21 years old he left home for the first time and came to London to study at St. George's Hospital. However, his money gave out in six months and he joined the Navy. After nine years he went back to the study of medicine. He set up practice at Winchester but met with no success. He removed to London but met with little success at first. On July 13, 1764, he obtained his M.D. degree at Aberdeen. After the publication of his Essay on Puerperal Fever, he received some recognition but still felt the need of serving as Surgeon to the "William and Mary" Yacht.

On the death of Dr. Cooper, Denman and Mr. Osborne bought Dr. Cooper's apparatus for £120, and began to lecture on midwifery. The lectures were a success. This was in 1770. Thirteen years later, when Dr. William Hunter died, he was the leading obstetrician in London.

According to Herbert Spencer, Denman's great reputation rests upon his "Aphorisms" and his "Introduction to the Practice of Midwifery". Spencer says that the 3rd edition of the latter "is perhaps the most splendid work on midwifery in the English language, whether regarded from the point of view of the format, paper, printing and illustrations of the work; the learning and knowledge it exhibits; or the ordered, lucid, and judicial manner in which that knowledge is presented."

THE ROENTGEN DIAGNOSIS OF PRIMARY LUNG CANCER*

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and
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The purpose of this presentation is to evaluate the accuracy of the roentgenologist in the diagnosis of cancer of the lung. To this end, the roentgenograms and hospital records on the 160 pulmonary carcinomas diagnosed at the University of Virginia Hospital during the ten year period, July 1, 1939, to June 30, 1949, were reviewed and analyzed.

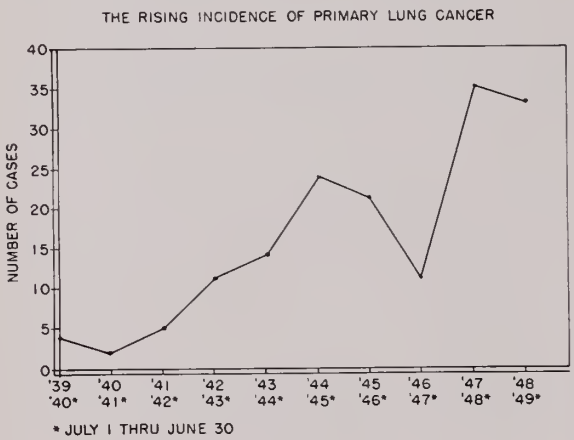

Fig. 1.

Figure 1 shows how the number of cases in this particular institution has increased in recent years. There is nothing unusual in this universal experience, which is certainly due in part to more accurate recognition and possibly in part to actual increase in the incidence of the disease. Carcinoma of the lung now constitutes about ten per cent of all malignancy and one per cent of all autopsy case material.

The distribution according to sex, age, and race, the symptomatology, location in the lungs, clinical course, and postoperative survivals are roughly the same as those reported in other series. These statistics are therefore omitted. In fact, the statistics in many of these same cases were published in February, 1949, by Camblos, White and Drash.

The pioneer work of Graham and Rienhoff in the development of total pneumonectomy was done in 1933. The technique was rapidly perfected and the operation soon became a standard part of the repertoire of all competent thoracic surgeons. For the first time, cancer of the lung could be cured. As with all cancers, cure could be obtained only if the disease was completely eradicated. That is, the surgical procedure had to be performed before malignant cells had escaped from the lung. This great advance placed a heavy burden on physicians responsible for diagnosing, or at least suspecting, the disease. Delay in recognition now could mean loss of a chance for cure. It is true that the mediastinal glands on the affected side can be extirpated (provided tumor has not broken through the capsule and invaded surrounding tissue). Also, as demonstrated by Ochsner, pneumonectomy plus resection of a portion of the homolateral diaphragm or chest wall is possible when exploration reveals limited invasion of the contiguous structure. However, these extensions of pneumonectomy have not appreciably lightened the burden of the diagnostician. It is still vital that he recognize, or suspect the presence of, lung cancer just as soon as possible, if the thoracic surgeon, at exploratory thoracotomy, is to find operable disease.

Unfortunately for the peace of mind of the physician and the health of his patients, cancers begin as microscopic, asymptomatic lesions and often disseminate cells *via* the lymph and blood channels or invade structures adjoining the organ of origin before producing symptomatic evidence of their presence. Cancer of the lung is no exception. Also, when a small, early cancer first produces symptoms, it naturally expresses its insidious development by the production of minimal, undramatic symptoms. Again, cancer of the lung is no exception. Cough is usually the first manifestation. Since almost every adult has either a chronic or an intermittent cough, the detection of the onset of the change in cough due to the growing tumor is very difficult for the victim, much less for the physician. When other symptoms are added, usually mild weight loss, chest pain, and

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hemoptysis, the physician naturally becomes aroused, but, of course, in the meantime, the tumor has progressed considerably. Still, the only approach to pulmonary cancer is to maintain a high index of suspicion and to look carefully for the disease at the slightest excuse. As pneumonectomies are performed earlier and more frequently, the percentage of long term survivals can be expected to rise slowly.

To look carefully for the disease at the slightest excuse always involves a roentgen study of the chest. It is the rare cancer that does not produce some abnormality in a careful study while still in an operable stage. But as the internist faces the problem of recognizing a change in cough habit, so the roentgenologist faces a number of comparable difficulties.

As a matter of fact, the roentgenologist often does not see tumor shadow in his radiographs of a patient who has primary pulmonary cancer. Particularly in advanced cases, it is frequently the pneumonitis, atelectasis, emphysema, abscess, bronchiectasis, pleural thickening, or pleural effusion incited by the cancer which casts the abnormal shadows. Changes resulting from encroachment upon an air passage and from secondary infection readily mask the underlying tumor. In the 160 cases reviewed, routine chest roentgenograms revealed visible tumor in 113, or roughly 70 per cent. In the remaining 47 (roughly 30 per cent) tumor was completely obscured by secondary changes.

To turn to the 160 analyzed cases, these are the pathologically proven cases of pulmonary cancer which had chest roentgenograms interpreted before the correct diagnosis had been established. Cases referred with established diagnoses are not included. Only the interpretation of the first routine posterior-anterior and lateral radiographs has been considered. Where the correct diagnosis was established by subsequent special examination, unless the roentgenologist advised the additional study because he suspected pulmonary cancer from the original routine examination, he is credited with a missed diagnosis. Of course, in many instances, the X-ray report did not include a flat diagnosis of primary pulmonary cancer. Usually two or more possible diagnoses were considered, any of which could produce the findings in that particular chest; but if the roentgenologist recognized the possibility of cancer and so stated on his original report, he was credited with a correct diagnosis.

The roentgenologists' score is shown in Figure 2. A graph (Figure 3) of the percentage of accuracy

DIAGNOSTIC ACCURACY BY YEARS

Year	Total Cases	Correct Diagnosis	Missed Diagnosis
July 1, '39 - June 30, '40	4	2 (50%)	2 (50%)
July 1, '40 - June 30, '41	2	1 (50%)	1 (50%)
July 1, '41 - June 30, '42	5	5(100%)	0 (0%)
July 1, '42 - June 30, '43	11	5 (45%)	6 (55%)
July 1, '43 - June 30, '44	14	8 (57%)	6 (43%)
July 1, '44 - June 30, '45	24	15 (62%)	9 (38%)
July 1, '45 - June 30, '46	21	13 (62%)	8 (38%)
July 1, '46 - June 30, '47	11	8 (73%)	3 (27%)
July 1, '47 - June 30, '48	35	29 (83%)	6 (17%)
July 1, '48 - June 30, '49	33	28 (85%)	5 (15%)
	160	114 (71%)	46 (29%)

Fig. 2.

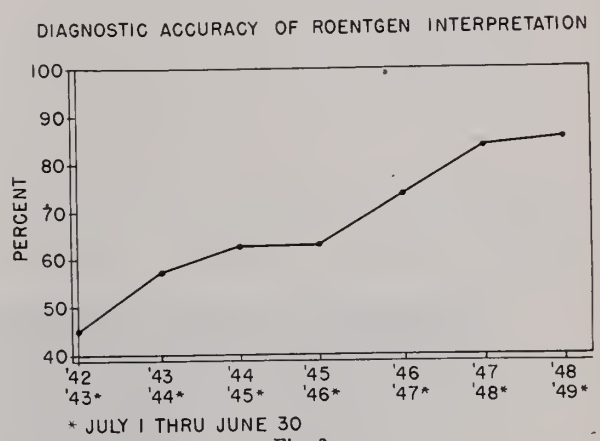

Fig. 3.

during the past seven years, when the number of cases was significantly large, shows an improvement from a rather shocking 45 per cent to a respectable 85 per cent. The improvement reflects greater awareness of the disease which experience brings. The lack of greater improvement indicates the inherent difficulties in recognition of bronchogenic carcinoma. In most cases recorded here as missed diagnoses, the chest X-rays actually were correctly interpreted in that an infiltrate, abscess, atelectasis, bronchiectasis, pneumonitis, or pleurisy was described and reported. But the possibility that the changes were due to an underlying partially or completely obscured lung cancer was not suggested. Fortunately, in most instances, other evidence or the clinical course did suggest the real trouble, and further roentgen studies, smears of sputum or pleural fluid, and bronchoscopy resulted in either a positive diagnosis of inoperable lung cancer or exploratory thoracotomy.

Subject to the inevitable exceptions which no biological classification can escape, pulmonary carcinoma produces roentgen findings which fall under one or a combination of several of the headings listed in Figure 4. This chart analyzes the roentgenologic

ANALYSIS OF DIAGNOSTIC ACCURACY OF PREDOMINANT X-RAY FINDINGS

Predominant Findings	Total Cases	Correct Diagnosis	Missed Diagnosis
1. No X-ray change	1	0	1
2. Hilar shadow alone	36	33	3
3. Peripheral shadow	24	16	8
4 Extreme apical shadow (Pancoast)	1	1	0
5 Diffuse infiltration	2	2	0
6 Abscess	10	9	1
7 Bronchial obstruction	67	41	26
a. Obstructive emphysema ____ 1			
b. Atelectasis _____ 25			
c Bronchiectasis or multiple small abscesses _____ 15			
d Drowned lung (atelectasis and excess fluid) _____ 26			
8 Primary with metastases to nodes, lung, pleura, or rib	11	9	2
9 Pleural thickening and fluid obscuring a hemithorax	8	3	5
	160	114 (71%)	46 (29%)

Fig. 4.

findings in the 160 cases. Where several features were present in one case, it was listed under the most obviously demonstrated abnormality. When one notes where the diagnostic failures occurred, the obstacles to immedite recognition of pulmonary cancer by X-ray are at once obvious.

To comment briefly on each category:

1. In this lone case, a very small bronchogenic carcinoma was discovered at autopsy. Death was due to unrelated causes, but chest radiographs failed to show any evidence of the presence of cancer. Obviously, pulmonary cancer remains invisible until it is of sufficient bulk to produce a demonstrable shadow or until it causes partial obstruction of an air passage or until it has set up a secondary infection. Nevertheless, a demonstrable roentgen change can be counted on to appear before the cancer has advanced beyond an operable stage.

2. In the group where a hilar shadow was the predominant finding (Figure 5), the roentgenologists were prompt in suspecting lung cancer. This is encouraging, for most of the tumors in this group were early, operable lesions. They had not yet obstructed an air passage or caused secondary infection. Yet seldom could a flat diagnosis be given with confidence because other conditions may produce identical findings (Figure 5).

3. In the peripheral carcinomas, the roentgenologist faces serious difficulty.

When the cancer is infiltrating, the blocking of small air passages, the superimposition of pneumonitis and atelectasis combine to produce an X-ray appearance which cannot be distinguished from tuberculosis or pneumonia (Figure 6). The roentgenologist must learn always to think of cancer when he encounters a peripheral infiltration. He must carefully analyze the composition of the shadow, attempting to define a heavily obscured underlying area of greater density. He must continually remind

Fig. 5. A—A small hilar bronchogenic carcinoma on the left with minimal infiltration and atelectasis.

B—Hilar tuberculosis on the left. There is no possibility of making the differential diagnosis roentgenologically when lesions of this type are encountered.

Fig. 6. A—Right middle lobe pneumonia.

B—Right middle lobe bronchogenic carcinoma with drowned lung obscuring the tumor. Radiological differentiation cannot be made.

the internist that, when the initial impression is tuberculosis, if the sputum is negative for tubercle bacilli, cancer must at once become the leading consideration. When pneumonia is the initial impression, the roentgenologist must insist on closely spaced serial X-ray studies. If resolution is not prompt, again cancer becomes the foremost consideration. As the pneumonitis responds to treatment, the tumor shadow frequently emerges more distinctly. At any rate, no pneumonia should be dismissed from observation until the chest is clear roentgenologically. Clinical and physical findings cannot be relied upon. Many patients with inoperable carcinoma give a history of repeated attacks of pneumonia. The underlying cause of the infection must be discovered during the first episode if the maximum chance of cure is to be attained. Also, it must be remembered that tuberculosis and cancer can occur together. A peculiar looking tuberculous lesion or one that does not respond rapidly to treatment should be suspected and investigated.

If these precepts are rigidly followed, though carcinoma will often not be the initial impression, the true situation will be suspected within a few days or, at most, a few weeks, so that a chance for cure will not be lost.

When a peripheral cancer casts a discrete shadow, it is readily confused with benign tumor or solitary metastasis.

4. The Pancoast type of apical pulmonary cancer has been so heavily emphasized that, though infrequently encountered, it is not apt to be missed. Though it produces recognizable X-ray findings, it invades pleura and ribs early.

5. The diffusely infiltrating carcinomas are indistinguishable from metastases. Their recognition is, unfortunately, a matter of academic interest only.

6. A fairly common type of pulmonary cancer is the solid mass, the growth of which has been so rapid that the center of the tumor is insufficiently vascularized. Central necrosis follows. With the establishment of bronchial drainage, the X-ray appearance is that of abscess. The tumor wall is usually thicker than the inflammatory wall of a pyogenic abscess and the interior of the tumor wall may be nodular. Since there is no infallible way of distinguishing, a necrotic cancer should be considered whenever a pulmonary abscess is discovered. For example, the thick walled lesion with a nodular interior in Figure 7 proved to be a pyogenic abscess, while the smooth thin-walled lesion is a carcinoma.

7. In the group of lung cancers whose outstanding feature is bronchial obstruction, the roentgenologist faces his most frequent and most difficult task.

(a) At an early stage of its development, the presumption is that every cancer with intrabronchial tumefaction produces partial obstruction resulting in obstructive emphysema. Because this is a phenomenon of early obstruction, it is seldom seen and probably occurs often before the tumor shadow itself can be demonstrated. Demonstration of obstructive emphysema is not pathognomonic of cancer. It simply

Fig. 7. A—A thick-walled cavity with nodular interior in the left upper lobe. Usually cavities of this type are due to necrosis in a pulmonary tumor. In this instance, the lesion represents a pyogenic abscess.

B—A very thin-walled cavity with perfectly smooth interior. This represented a bronchogenic carcinoma with central necrosis.

indicates that the bronchus is partially occluded. Foreign body, stricture, benign tumor, and malignant tumor are to be considered. But whenever obstructive emphysema is encountered, primary lung cancer must be considered.

(b) As obstruction becomes complete, atelectasis inevitably follows. In those cases in which the tumor shadow can be seen, the correct diagnosis is usually suspected, though benign glandular enlargement cannot be ruled out. But often the dense shadow of the atelectatic lung completely obscures the tumor on routine roentgenograms. In these cases, though the atelectasis is fully and accurately reported, the roentgenologist has not done justice to his patient when he fails to bring up the possibility of underlying cancer at the start of the investigation. Yet simply routinely to list primary pulmonary carcinoma as a possibility wherever atelectasis is encountered is not wholly desirable. The referring physicians soon ignore a too often repeated warning. The clinical findings must be carefully evaluated in consultation with the referring physician. A wise decision as to the next steps to be taken can be reached. This is much better than simply listing cancer routinely as a diagnostic possibility.

(c) Bronchiectasis and multiple abscesses are a still later result of bronchial obstruction. Their presence is even more apt to hide the underlying cancer on routine chest study (Figure 8). Everything said about atelectasis applies here, too.

(d) The presence of drowned lung—partial atelectasis and congestion by excess fluid, with or without secondary pneumonitis—is still more apt to hide the underlying carcinoma. The most frequent error of the roentgenologist is to diagnose pneumonia; of the internist, to omit serial X-ray studies because of clinical response to treatment for pneumonia. Again, consultation, a joint discussion is far more apt to lead to correct handling of the patient than is the routine listing of cancer as a diagnostic possibility.

Though it is impossible to avoid errors in judgment, particularly in the group under discussion, by constantly keeping cancer in mind and by considered consultation, it should be possible to arrive at the true diagnosis without a dangerously prolonged delay. Additional and special X-ray studies, Papanicolaou smears, bronchoscopy, bronchography and exploratory thoracotomy should be used freely. There is one relaxing feature of the problem. In those unfortunates whose secondary changes are more advanced, making detection of the cancer more difficult, the cancer is apt to be inoperable, so that failure of prompt recognition is less important.

8. In this group, correct diagnosis is seldom of practical value. When metastasis is confined to the homolateral lung or to a very restricted portion of the homolateral thoracic cage, surgery may still be possible. When the diagnosis is missed, the error usually consists in reporting metastases only, without recognizing the primary pulmonary lesion, a natural and

Fig. 8. A—Bronchiectasis in the right lower lobe.

B—Bronchiectasis in the right lower lobe secondary to a broncho-genic carcinoma, partially occluding the main stem bronchus. Note that the secondary changes completely obscure the tumor.

usually harmless error.

9. These patients are inoperable, and correct diagnosis is relatively unimportant. With complete obscuration of the thorax, recognition of the cancer is obviously impossible until study of the fluid or X-ray examination after removal of the fluid is carried out.

Conclusion

1. An analysis of the interpretation of initial routine chest X-rays in 160 cases of primary pulmonary carcinoma has been presented.

2. The diagnostic accuracy has increased in proportion to the rising incidence of the disease and to the experience of the roentgenologists.

3. When the diagnosis was missed, it was usually because secondary changes obscured the underlying tumor. Atelectasis, bronchiectasis, etc., were correctly reported. But failure to suspect the underlying tumor is just as grave an error as an outright misinterpretation.

4. Fortunately, it was generally true that the most completely obscured cancers were advanced, inoperable lesions. The earlier ones, with less severe secondary changes, were much more readily suspected.

5. The referring physician must realize that the prompt recognition of primary lung cancer is a difficult roentgenologic achievement. Only by actual consultation and discussion, with joint planning of further studies, will the best interests of the patient be served.

6. Primary lung cancer can be diagnosed positively only by the pathologist. Often the presumptive diagnosis can be made by the roentgenologist and usually he can at least include it among several tentative diagnoses. Because the pathological processes set up by a lung cancer cast X-ray shadows similar or identical to the shadows produced by many other conditions, the roentgenologist will frequently cause false alarms by suggesting the possibility of cancer where none exists. He will inevitably fail to suspect the presence of some.

7. It is the responsibility of the roentgenologist to keep the diagnosis ever before him. He can reduce the number of early cases which he misses, even on initial study, to a small figure.

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Discussion

Dr. Frank Philip Coleman, Richmond: Doctors Cooper and Kroll's analysis of 160 primary carcinomas of the lung emphasizes the diagnostic importance of roent-

genography. Their ability to make a correct presumptive diagnosis in 85 per cent of all patients with lung cancer is extremely gratifying and should lead to more frequent diagnosis of the disease in an operable and curable stage. The radiologic features have been admirably presented and illustrated by the authors; therefore, I shall confine my remarks to symptoms, supplementary diagnostic measures, and results of treatment in a series of cases.

What pulmonary symptoms or signs indicate referral of patients to the roentgenologist? Cough, pain in the chest and hemoptysis, alone or in combination, are the most common symptoms produced by lung cancer. Approximately 90 per cent of the patients will exhibit cough or a change in the cough-habit as the initial symptom. Pain may vary in intensity from a "heavy feeling" in the chest to that of severe and intractable pain associated with osseous or brachial plexus extension of the cancer. The pain may be fleeting in character but it has a tendency to persist and recur. Hemoptysis in the cancer age group immediately raises the question of lung cancer. Physical signs of atelectasis, persistent pneumonic signs, atypical behavior of any pulmonary infection, and localized asthmatic wheezes require roentgenograms and suitable follow-up roentgen studies. Since a presumptive diagnosis of lung cancer can be established in a high percentage of cases in the first roentgenogram, the liberal referral of all patients with pulmonary complaints to the roentgenologist is indicated if progress is to be made in the treatment of this disease.

Mass chest x-ray surveys in schools, industries, Government, and Armed Forces Induction Centers have revealed lung tumors in many asymptomatic individuals. These studies directed to the detection of pulmonary tuberculosis account for frequent early diagnosis of cancer of the lung.

Although the roentgenogram leads to a high percentage of correct presumptive diagnosis of lung cancer, a positive diagnosis can be established only by obtaining tissue for microscopic examination. In a series of 117 consecutive private patients and an additional 45 patients from the Thoracic Surgery Service, McGuire Veterans Hospital, the presumptive x-ray and clinical diagnosis of lung cancer was confirmed by various methods (*Table 1*).

TABLE 1—METHODS OF DIAGNOSIS 162 CASES CARCINOMA LUNG.

	CASES
Bronchoscopy	75
Thoracotomy-Exploratory	45
Papanicolaou Stain	2
Biopsy Extrathoracic Lymph Node Extension	11
Craniotomy-Unsuspected Brain Metastasis	3
Biopsy Chest Wall	2
Punch or Aspiration Biopsy	4
Tumor Cells Pleural Effusion	4
Biopsy Wall Peripheral Lung Abscess	3
Thoracoscopy-Biopsy	1
Autopsy	12

All the methods of tissue diagnosis of lung cancer, excluding the first three procedures (Table 1), usually contraindicate curative surgery.

Although reported statistics indicate improvement in operability and resectability rates during the past ten years, there is still an urgent need for diagnosis of this disease in its early stages. One of every 4 patients referred to the thoracic surgeon has a chance of cure by removal of the lung (*Table 2*).

TABLE 2—RESULTS IN 162 PROVED CASES CANCER LUNG

		CASES	PER CENT
Inoperable		66	40.8
Operable-Thoracotomy		96	59.2
A. Thoracotomy Only	39		
(Resection Contraindicated)			
B. Resection Feasible	57		
1. Lobectomy-Paliative	4		
2. Pneumonectomy	53		

A positive preoperative pathologic diagnosis of lung cancer was obtained in only 53 per cent of the cases subjected to pulmonary resection (*Table 3*).

TABLE 3—METHODS OF CONFIRMING THE CLINICAL DIAGNOSIS IN 57 CASES OF CANCER LUNG SUBJECTED TO RESECTION

	CASES
Bronchoscopy—Positive	28
Exploratory Thoracotomy	27
Biopsy Wall of Peripheral Lung Abscess	2

Forty-five patients without preoperative positive tissue diagnosis who showed clinical or roentgenographic evidence of lung cancer were subjected to exploratory thoracotomy. Of this group, 27 were found suitable for resection of the lung, whereas only 28 of the 75 cases with preoperative positive bronchoscopic biopsies were suitable for excisional surgery. This emphasizes the importance of exploratory thoracotomy where a presumptive diagnosis of cancer cannot be pursued to a morphologic answer and it further suggests that patients requiring thoracotomy for diagnosis have the best prognosis.

Of the 117 cases of lung cancer previously mentioned, 32 were subjected to pneumonectomy and 2 to palliative lobectomy. Twenty-two per cent of the patients surviving total pneumonectomy are living and well for a period of five years or longer (*Table 4*).

TABLE 4—RESULTS IN RESECTION 34 CASES CARCINOMA LUNG

	CASES	PER CENT
Resections (2 Palliative Lobectomies)	34	--
Hospital Deaths	5	14
Deaths Later	15	--
Living With Recurrence	1	--
Living and Well	13	--
A. Over 5 Years	6	22

I want to thank Doctors Cooper and Kroll for a most interesting presentation and for the privilege of discussing their paper.

THE MANAGEMENT OF PRIMARY GLAUCOMA*

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The management of primary glaucoma is probably one of the most difficult problems that confronts the ophthalmologist in daily practice; however, it is certainly one of the most fascinating problems and presents us with possibly our greatest challenge. The condition of glaucoma has been recognized almost since the earliest recorded days of medical history and yet it was considered a hopeless affliction until 1856, less than one hundred years ago, when von Graefe[1] first employed iridectomy and reported on the successful treatment of certain cases of glaucoma by this means. The next great step forward was made by Laqueur[2] who, in 1875, found that physostigmine lowered the tension in glaucomatous eyes. Since that time a number of other important advances have been made in the treatment of the condition; yet, today, almost a hundred years after von Graefe, the management of glaucoma remains a vexatious problem in many instances.

Classification

The classification of glaucoma which all of us learned during medical school and post-graduate study is:

I. Chronic simple (noncongestive, compensated).
II. Acute congestive (incompensated).
III. Chronic congestive (incompensated).
IV. Absolute.

This classification holds that all forms of primary glaucoma are the same disease process, differing from one another only in the stage and severity of the condition. This conception was outmoded by the work of Rosengren[3] who showed that all cases of primary glaucoma fell into two easily separated groups, those in which the angle of the anterior chamber is narrow, and those in which the angle is wide and the chamber of normal depth.

All of the congestive cases belong to the narrow chamber angle group and usually the unaffected eyes of these patients also have narrow angles. This may mean that these cases have congenitally narrow angles, which predispose them to the disease, or that the narrow angle in the preglaucomatous eye is the pathologic result of previous subclinical attacks of glaucoma. There are also some narrow angle glaucomas of the noncongestive type, and in these there is no history of haloes, pain, or blurring of vision. Histologically it has been shown that shortly after the onset of an acute attack there is edema of the ciliary body which is sufficient to push the root of the iris forward and obstruct the chamber angle. Friedenwald[4] holds that the primary local lesion in these cases is in the ciliary body. The vasomotor disturbance in the ciliary body in these cases does not cause any recognizable symptoms until the chamber angle has become at least partially obstructed, but each succeeding vasomotor attack leaves an increasing number of anterior peripheral synechiae. While the cause of these vasomotor attacks is not known, it is thought that emotional stresses may play a large part in initiating them.

In primary narrow angle glaucoma there are progressive phases observed in the condition. In the early stages the attacks, if not severe, may not do much damage to the pressure control mechanism in the eye, and the intraocular pressure may return to normal between attacks. When the condition is more advanced the pressure does not return to normal between attacks and the disease has then become chronic. In the third phase we find the severe attacks which are incompletely resolved and the condition has passed into the chronic congestive phase. The end stage in uncontrolled cases is absolute glaucoma.

Primary wide chamber angle glaucoma comprises almost all of the cases formerly classified as chronic noncongestive glaucoma or glaucoma simplex. Very few cases of this condition have been studied pathologically but from those that have been sectioned it would appear that the secretory mechanism of the ciliary body is not at fault in this type of glaucoma but that the cause must be sought in the drainage

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apparatus. Friedenwald[4] has suggested that sclerosis of the afferent arterioles of Schlemm's canal might be the cause of the glaucomatous process. Other workers, particularly Otto Barkan,[5] have in recent years called attention to the fact that in wide chamber angle glaucoma the corneo-scleral trabeculae between Schlemm's canal and the anterior chamber contain large amounts of melanin pigment in many cases. It has been held that this melanin clogged in the spaces between the trabeculae may be the cause of the glaucoma, but other authors believe that the deposition of melanin in this location is a complication, rather than a cause, of the glaucoma. It is seen, therefore, that the etiology of wide chamber angle glaucoma is, at this time, somewhat obscure. However, it should be remembered that hypotony from penetrating surgery can cause an edema of the ciliary body and convert the condition into a narrow chamber angle glaucoma. Two rather rare subtypes of wide chamber angle glaucoma are the cases which show an extension of the endothelium around the chamber angle on to the iris, and the cases of glaucoma capsulare which are secondary to exfoliation of the lens capsule.

It is not the function of the writer to go into the diagnosis of primary glaucoma; however, it would seem well to mention a few of the more important diagnostic points. Careful tension curves are invaluable aids in the diagnosis and management of primary glaucoma. These should include 24 or 48 hour curves and also curves plotted over a period of time so that the base pressure and the peak pressures may be properly evaluated, as has been pointed out by Algernon Reese.[6] The accurate plotting of visual fields, both peripheral and central, over a period of months or years gives us definite information as to the efficacy of the treatment and the need for further therapy. The examination of the anterior chamber with the slit lamp and the gonioscope should tell us with which type of glaucoma we are dealing. A careful fundus study frequently gives the first clue that we are dealing with glaucoma and probably the first ophthalmoscopic change to be noted is a recession of the lamina with a change in the size and shape of the physiologic excavation followed by a change in the course of the vessels on the disk. Various provocative tests may be helpful in the diagnosis of glaucoma and, last, but by no means least, a careful history should be obtained in each case, laying particular stress on pain, blurring of vision, haloes, and the family history of eye disease of any kind.

MEDICAL TREATMENT

An understanding of the intraocular musculature is essential but time does not allow a full discussion of this in this paper. The sphincter pupillae runs as a band, less than a millimeter wide, around the pupillary border of the iris. The dilator muscle extends as a thin sheet between the pigment layer of the iris and the stroma, running from the root of the iris and ciliary body to the pupillary border. The main interest of the ciliary muscle in the medical treatment of glaucoma lies in its attachment to the scleral spur. Through this insertion it is believed that the ciliary muscle exerts a pumping action upon the canal of Schlemm and through its contraction tends to hold the canal open.

The ciliary muscle and the sphincter pupillae are innervated by the parasympathetic nervous system and the dilator pupillae by the sympathetic system. The terminal synapse for the parasympathetic fibres lies in the ciliary ganglion and that for the sympathetic fibres in the superior cervical sympathetic ganglion.

The neurohumoral theory of transmission of impulses has been fairly well established by the work of Loewi, Dale, and others.[7] This theory postulates that impulses are transmitted from one nerve fibre to another and finally to the effector organ through the action of a chemical substance called an effector substance. This is liberated at the nerve endings upon the arrival of a nerve impulse. This substance then initiates a similar impulse in the next nerve cell in the pathway. An antagonistic substance is constantly present in the tissues which rapidly destroys the effector substance, thus permitting only momentary stimulation of the next nerve cell in the chain. It has been demonstrated that the effector substance throughout the nervous system is acetylcholine. The main action of acetylcholine with which we are here concerned is the activation of structures supplied by the postganglionic fibres of the parasympathetic nervous system. The antagonistic substance to acetylcholine is cholinesterase. Organs supplied by the sympathetic system are activated by the liberation of an adrenalin-like substance at the nerve endings called sympathin. The

chief antagonistic substance to sympathin is amine oxidase.

In considering the medical treatment of glaucoma we are primarily concerned with those drugs which stimulate or depress the postganglionic parasympathetic fibres. However, those substances which stimulate the sympathetic system (sympathomimetic substances) do play a part, although it is somewhat less important than the parasympathomimetic substances. The substances of each group act either by inactivating cholinesterase or amine oxidase, thus allowing acetylcholine or sympathin to accumulate in high concentrations, or by acting on the motor end plate directly as do acetylcholine and sympathin.

Parasympathomimetic (Excitatory) Drugs. These are divided into two classes, the anticholinesterase drugs and agents stimulating the motor end plates. In the first class are found physostigmine (erserine), prostigmine, and DFP (di-isopropyl fluorophosphate), while in the second group are drugs which are derivatives of, or similar in action to, acetylcholine in their effect on the motor end plate but are sufficiently resistant to destruction by cholinesterase to reach the iris in sufficient concentration to cause miosis. Under this latter classification are found mecholyl, doryl, pilocarpine, and furmethide.

Parasympatholytic (Depressor) Drugs. These substances are alkaloids obtained from belladonna or are chemically related to them. This group consists of atropine, scopolamine, homatropine and euphthalmine.

Sympathomimetic Drugs. These are divided into two groups, the anti-oxidase drugs which protect sympathin, such as cocaine, and agents which stimulate the motor end plate, such as epinephrin, neosynephrin and paredrine.

Narrow Angle Glaucoma

This condition is characterized by rapid rises in tension associated with transient blurring of vision due to corneal edema and this may vary all the way to complete loss of vision, intense pain in the eye and temple, nausea and vomiting. After the disease has become well established there may be sufficient rise in base pressure to cause visual field defects. During the acute phase the main problem of the ophthalmologist is the rapid reduction of tension by whatever means seems most feasible. I feel that these cases are more easily handled if the tension can be reduced by medical means rather than operating when the eye is at its peak tension. Therefore miotics should first be used rather heroically and they should be given in synergistic combinations. Of the parasympathomimetic drugs it has been shown that certain miotics are effective by inhibiting the action of cholinesterase, thus allowing the acetylcholine in the tissues to stimulate the motor end plate and produce miosis, while the other group simulate the action of acetylcholine by direct action upon the motor end plate. In the first group we find eserine, physostigmine and DFP. Leopold and Comroe,[8] Dunphy,[9] and Sallman[10] have shown that DFP may precipitate an attack of acute glaucoma because of the congestion of the ciliary body which it produces and therefore its use in the narrow angle glaucoma cases is not advised. In the second group of miotics, those which simulate the action of acetylcholine, we have pilocarpine, mecholyl, doryl (carcholin), and furmethide. Probably the most widely accepted medical treatment of the acute attack of narrow angle glaucoma combines the use of 1% eserine or 5% prostigmine with 2% pilocarpine, 1.5% doryl, or 10% furmethide. These drops are used alternately every ten minutes for two hours and during this period attention should be paid to the discomfort of the patient, for, while he was probably in pain from the glaucoma itself, his pain will certainly be increased by the use of the miotics as the ciliary spasm which they produce may be intense. After the two hour period has passed the drugs being used may then be given at hourly intervals. Other measures which may be tried are the use of retrobulbar injections of procaine and adrenalin, as reported by Gifford[11] in 1934, and the administration of hypertonic solutions of glucose intravenously to lower the intraocular tension through the osmotic attraction of fluid from the eye into the blood vessels, as advocated by Sansum[12] in 1917. In the event that the tension is not lowered within twelve hours after the attack has started surgery should be resorted to if at all feasible in order to prevent the formation of peripheral anterior synechiae.

In the event that the patient will not consent to surgery or for some reason surgery has to be postponed, the patient should be continued on a miotic regime in the interval between acute attacks. Narrow angle glaucoma, in the interval between attacks, usually responds more readily to weak miotics than

does the wide angle glaucoma. Therefore, it would seem preferable to continue the use of a weak miotic as infrequently as may be necessary to maintain miosis and normal tension. This will usually be at least twice daily of a miotic such as 1% pilocarpine, and the patient should always be instructed to use his drops the first thing in the morning and the last thing at night. Furthermore, occupational or recreational hazards such as working in a photographic dark room or attendance at motion pictures should be preceded by the instillation of a drop of whatever miotic is being used.

Chronic Narrow Angle Glaucoma

This includes two groups of eyes, the first of which shows chronic or recurrent congestive symptoms, while the second group has all the characteristics of wide angle glaucoma in spite of having narrow angles. This second group may follow one of three courses:

1. The angle may remain open and no sign of glaucoma may develop. 2. They may develop wide angle glaucoma due to whatever mechanism causes this condition. 3. They may develop typical acute congestive glaucoma.

Wide Angle Glaucoma

In this condition the diagnosis is perhaps more difficult than in the glaucomas which show congestive signs. Most frequently the personal history of the patient is entirely negative, the patient having consulted the ophthalmologist merely for a routine check-up. The most important point in the diagnosis is tonometry, not alone the digital method but with an accurately calibrated tonometer. More and more it is becoming standard procedure to take the tension with a tonometer on all patients over the age of 35.

We may suspect glaucoma in many patients because of the ophthalmoscopic appearance of the disk or because of changes in the visual fields, but at the time we see a particular patient the tension may be quite within normal limits. In this case repeated tension checks should be done at different hours of the day. In some cases it is necessary for the patient to be hospitalized so that a tension curve may be run over a period of 24 or 48 hours, for it is a well recognized fact that in glaucoma the tension tends to be highest during the early morning hours. Again, the tension curve should be run over some period of time, usually months, so that the base and peak pressures may be accurately determined.

In the diagnosis of wide angle glaucoma the visual fields may be helpful, although in the early stages the changes are frequently so slight that they are not picked up in routine field studies.

Various provocative tests may be of value in wide angle glaucoma and while some of them may dilate the pupil and block the angle even more, occasionally sending the tension to high levels, I feel they are justified under controlled conditions. The patient should know that a provocative test is being done and should realize that immediate surgery may be necessary, in case the rising tension is unable to be controlled by medical means.

In the medical treatment of wide angle glaucoma education of the patient is of primary importance. He should be taught to use his drops at the same time every day, precisely as ordered by his ophthalmologist, and should be cautioned never to run out of drops. It is wise to warn these patients of the symptoms of a rise in intraocular tension such as pain, blurring of vision, and haloes, and caution them to consult the ophthalmologist as soon as one of these symptoms appears. The patient should be further cautioned to return for check-up at the appointed times and not to let these appointments slide by.

The use of miotics in wide angle glaucoma should be limited to the weakest solution which will produce miosis and maintain the tension at normal levels with the fewest number of doses during the course of twenty-four hours. This means that the patient will have to be seen a number of times during the first few weeks while the tension is being stabilized. The degree of miosis and the state of the tension will furnish clues as to the effectiveness of the miotic being used. If the miosis is marked and the tension still elevated then it is hardly probable that stronger miotics will reduce the tension. However, if the pupil does not show much constriction and the tension remains elevated then it is possible that stronger miotics will reduce the tension.

Pilocarpine is the drug most frequently used in the medical treatment of glaucoma. If the tension is only slightly elevated, then a ½% solution of pilocarpine may be prescribed for twice daily instillation. However, if the glaucoma is more severe with an initial tension over 30 mm. Hg. Schiotz,

then a 1% solution should be ordered. If a 2% solution of pilocarpine fails to control the tension, then surgery should be considered.

Eserine is a very effective miotic agent but there is a tendency to develop an allergy to the drug when it is used over long periods, and therefore it is best not to use it by itself in wide angle glaucoma over any length of time. However, it may be used in combination with pilocarpine in strengths of ⅛ to ¼% without much danger of sensitivity developing.

Prostigmine acts like eserine in inactivating cholinesterase and is usually used in 5% solution in combination with other drugs. This drug is less likely to cause allergic phenomenon in the eye than eserine.

Doryl acts directly on the motor end plate. It resists destruction by cholinesterase and Van Dyke[13] has shown that it acts as an inhibitor of this substance. O'Brien and Swan[14] state that a 1.5% solution gives more prolonged miosis and is more effective than 2% pilocarpine. It may be used for patients who do not respond to pilocarpine or who have developed a resistance to pilocarpine.

Furmethide is about equal in strength to doryl. It also stimulates the motor end plate of the muscle cell and is resistant to destruction by cholinesterase. Owens and Woods[15] believe that it reduces the tension in glaucoma in many cases where other drugs fail. Tolerance to the drug can develop and allergy can occur.

DFP (di-isopropyl fluorophosphate) is the strongest miotic available for the treatment of glaucoma. As has already been stated, there is some danger in using it in narrow angle glaucoma because of the congestion of the ciliary body which it produces. However, there are no similar contraindications to its use in wide angle glaucoma. It has a prolonged action and can be used at intervals of once a day to as long as once a week in mild cases of glaucoma. It often lowers the tension where other miotics fail. There are several disadvantages to the use of the drug. Many patients complain of blurring of vision and pain as a result of iris and ciliary body spasm. In some cases there may be circumcorneal injection. Leopold and Comroe[8] and Dunphy[9] reported several cases of acute rises in tension following the use of DFP. When the drug is used it should be instilled in from .035% to 0.1% solution.

The Surgical Treatment of Primary Glaucoma

In the surgical treatment of any type of glaucoma it should be recognized that we are attempting to permanently lower the intraocular tension after the use of miotics has failed to do so. The most commonly used surgical procedures involve the formation of a filtering cicatrix, and of utmost importance in this is the establishment of an endothelial lined tract.

In considering the most commonly used filtering operations it is well to consider both the advantages and disadvantages of each.

Iridencleisis. During recent years this operation, first described by Holth,[16] has made a well deserved comeback in popularity. Some years ago many ophthalmologists, among whom the writer is included, felt that iridencleisis was not a good surgical procedure because of the deliberate inclusion of the iris in the scleral wound, while in other surgical procedures, such as cataract, we shunned iris prolapse as we would the plague. Perhaps iridencleisis is not a good surgical procedure but the answer seems to be that it works well in permanently reducing the tension in many cases of glaucoma. The operation is easy to perform and it does produce adequate filtration in cases in which the tension is not too high. The disadvantages of the procedure are that it has been reported to give rise to sympathetic ophthalmia, although such reports are being seen with decreasing frequency. In the case of an atrophic iris in the aged the operation does not produce the desired results. Some authors have compared the inclusion of the iris pillars in the wound to a wick, but in a personal communication Sanders[17] has stated that pathologically this is not true. The iris pillars simply serve to hold the wound open until it can be lined by endothelium.

Trephining. This operation, originally described by Elliot,[18] was extremely popular for many years but recently it has been used less frequently due to the rising popularity of iridencleisis. In chronic glaucoma with high tension, above 40, it is to be preferred to the iris inclusion procedures in that it gives a larger area of filtration. The disadvantages of the operation are that it is liable to produce lens changes, the opening may become plugged by subconjunctival tissues, there is occasionally delayed restoration of the anterior chamber, and hypotony may develop.

LaGrange Iridosclerectomy. This operation, like the trephining, is technically more difficult than iridencleisis and there is more trauma connected with it. However, in higher tensions it seems to produce better results than iridencleisis. In the writer's experience it is the operation of choice in the Negro.

Flap Sclerotomy. This procedure was first described by Herbert,[19] but then fell into disrepute, even its originator abandoning it. However, recently Cruise[20] has reported on his use of a modified Herbert's procedure over a period of twenty-five years. During the years 1947 and 1948 the writer has done 42 of these operations with the desired results obtained in better than 88%. These cases include acute narrow angle glaucoma, chronic narrow angle glaucoma, and wide angle glaucoma. As Cruise[20] and Boxill[21] described the technique, a conjunctival flap is dissected down to the limbus and the cornea split for a distance of about 1 mm, as is done in the trephining operation. The flap of conjunctiva is turned down over the cornea and a 5 mm. horizontal incision is made into the sclera 1 mm. behind the limbus with a cataract knife. The sclera is perforated in the center of this incision due to the straight blade cutting on the convex surface of the globe. When this point is penetrated the surgeon then ceases cutting and waits for the gradual decompression of the anterior chamber. After this is completed the incision is enlarged through the entire depth of the sclera over its 5 mm. length. At either end of this incision one blade of a small scissors is inserted and a 2 mm. cut, directed toward the center of the cornea, is made at each end of the primary incision. The insertion of an iris spatula protects the iris at this point. The conjunctival flap is then replaced and one suture, tied in a simple knot, is placed between its margins. The operation is easy to perform and the results have been good. Massage of the globe is started within 24 hours after the operation and is carried out twice daily until the surgeon is certain that a filtering cicatrix has been established. The massage tends to keep the hinged flap elevated and the wound open, thus preventing the formation of fibrous tissue which would clog the opening, and allowing the endothelium of the cornea to grow into the wound, lining it.

Acute Narrow Angle Glaucoma

By far the greater majority of acute cases with congestive symptoms fall into this category. Prompt reduction of the intraocular tension in these cases is essential, and it should be well recognized that surgery should not be long delayed in these cases. In the older age groups, many of whom are debilitated by the infirmities of age, it is perhaps wiser to maintain them on a miotic regime, provided the tension can be reduced to safe levels by miotics, rather than to attempt surgery on a group of patients who would tend to have more complications than a group of ordinary healthy individuals. With the exception of this group it may be safely said that all patients who have suffered an attack of acute narrow angle glaucoma should undergo surgical treatment of the disease as soon as the eye can be got in shape for the operation.

In many of these cases the tension can be reduced by a strenuous regime of miotics to near normal or normal within a period of hours. If such can be brought about within twelve hours of the onset of the acute attack, it is then wise to wait until the eye loses all signs of congestion before operating. In this instance probably the operation of choice is the basal iridectomy, either peripheral or complete. If there are lens changes in addition to the glaucoma, then the complete iridectomy should certainly be done with a view to future extraction of the lens. The time element is extremely important in the choice of operation in these cases as is shown by the fact that when iridectomy is blindly adopted as the operation for acute glaucoma many failures result. In a small series Kronfeld[22] has reported 56% success with this operation in acute narrow angle glaucoma and Duke-Elder[23] estimates that the average success with this procedure in these cases will not be above 60%. Dunnington,[24] Chandler,[25] Kronfeld,[22] and others believe that the use of iridectomy in acute glaucoma is contraindicated when the case is of more than forty-eight hours duration and the tension cannot be maintained at normal levels by the moderate use of miotics. The primary reason for this view is that when acute glaucoma has persisted for such a length of time gonioscopic examination will reveal the development of peripheral anterior synechiae and the presence of these adhesions definitely lessens the chance of a successful outcome by means of an iridectomy. In such cases it is wiser to do some type of

filtering operation rather than rely upon iridectomy. Again, it is probable that some of the cases in which miotics will not reduce the tension represent an acute exacerbation of a chronic state, and here, too, a filtering procedure should be the operation of choice.

In Kronfeld's[22] report on acute narrow angle glaucoma treated by iridencleisis or trephining there was no appreciable difference in the results, the tension being reduced in from 70 to 75% of the cases regardless of which method was used. In spite of this there seems to be a general feeling that trephining is a more hazardous procedure than iridencleisis and its use should largely be reserved for the non-congestive cases. Others, notably Goar[26] and Spaeth,[27] feel that the iridencleisis should not be used in the acute cases. The iridosclerectomy of LaGrange may be used, but, again, this is a more complicated procedure and is technically more difficult than the iridencleisis. In these cases the writer feels that there is definitely a place for the flap sclerotomy operation. It is surely non-traumatizing, except in cases where peripheral anterior synechiae are encountered and then it is necessary to do an iridodialysis with a spatula in order to eliminate these synechiae. It is easy to perform and seems to work well with a minimum of complications. Furthermore, slow decompression of the anterior chamber, which is highly to be desired in acute glaucoma, is performed very easily in this procedure.

Other procedures which have been used in the treatment of acute narrow angle glaucoma are paracentesis of the anterior chamber and the posterior sclerotomy. The former is mentioned only to be condemned. I have never seen a case of acute narrow angle glaucoma in which paracentesis did more than lower the tension for an hour or so. Furthermore, the ciliary body is already edematous in these cases and the sudden reduction of intraocular pressure only serves to cause more edema of the ciliary body, so that the procedure thus actually does more damage than it does good. Posterior sclerotomy still has its advocates, but most surgeons feel that if an operative procedure is indicated it is wiser to do one which will give permanent reduction of tension rather than one which is only temporary.

Chronic Glaucoma

Before resorting to surgery there are several factors which should be taken into consideration. First, the medical treatment of the case has to be evaluated to determine whether the patient has had adequate miotic therapy. There is too great a tendency to operate upon all cases of glaucoma regardless of the situation which confronts us. The controversy between the medical and the surgical treatments has never been completely settled and, while many ophthalmologists feel that early operation is indicated in all cases of primary chronic glaucoma, it may well be that in the future new methods of medical treatment may be discovered which will upset all our present theories about the need for early surgical intervention in these cases.

The age and general physical condition of the patient must be taken into consideration, for, as Dunnington[24] has stated, the older the patient and the poorer the physical condition, the less urgent is the need for surgical intervention. In many of these patients the tension is only slightly elevated and the rate of deterioration of vision is slow, so that in this type it is probably wiser to rely upon medical treatment rather than to advise operation. These patients are more prone to develop the complications of glaucoma surgery than any other group. The irides are often atrophic and the vessels sclerotic and these changes create conditions that are less favorable for operation. In addition, in this age group the conjunctiva is often thin and atrophic, and there is not much of a layer of subconjunctival tissue. Again, these conditions are unfavorable for the formation of a satisfactory filtering cicatrix, and, if one is formed, the conjunctival bleb is most frequently extremely thin, which may lead to the danger of late infection. Many of these elderly patients will show some lens changes and frequently a few months after the operation for glaucoma has been performed a complete cataract will be formed.

The visual acuity should be checked at repeated examinations, and with deterioration of acuity we must be doubly sure that there are not present other conditions which are causing such deterioration rather than the glaucoma. Particularly in the older patients there are many conditions which may lead to a progressive loss of vision in addition to the glaucoma, such as lens changes, retinal disease, degeneration of the macula, etc., and if the visual acuity is failing due to the glaucoma there should be other signs of the progression of the glaucoma,

such as progressive field changes and the elevation of the base pressure.

The ocular tension is another factor to be considered in these cases, but it should be remembered that normal tension for one patient is not necessarily normal for another. The eyes of one patient may be able to withstand higher pressure without damage than those of another patient. An evaluation of the peak and base pressures as described by Reese[6] may clarify the situation in regard to the ocular tension. By peak pressure is meant the highest point to which the pressure rises, while the base pressure is the lowest point to which it falls. Over a period of months or years a constantly rising base pressure is more indicative of future visual loss than is a peak pressure which remains elevated only for a short period and promptly returns to normal levels. Therefore, a constantly rising base pressure in spite of the continued use of miotics is one which will require surgery.

Visual Fields. It is of extreme importance that both peripheral and central fields be carefully and repeatedly mapped out and studied. The changes in the fields probably give a more accurate estimation of the progress of the glaucoma than any other method at our command. Great care should be taken in trying to detect the initial changes in the fields because, as Reese,[12] Burke,[28] and Randolph[29] and others have shown, the results obtained from early operation are a great deal better than those obtained when the operation is done in the later stages of the disease. In 1941 Randolph[29] set forth certain criteria for the classification of early and late glaucoma based upon the visual field changes. Those cases in which the peripheral field defect was not more than 15 degrees in any meridian, or the blind spot was enlarged not more than 10 degrees in any diameter were considered early cases. All cases not in this category were considered late cases. Of all early cases operated upon, by whatever means, the percentage of success was over 80%, while in all late cases operated upon the percentage of success ran about 35%.

Chronic Narrow Angle Glaucoma

This type of glaucoma is characterized by a narrow anterior chamber with the iris playing an important part in the blockage of the angle. At first it is merely by contact but later peripheral anterior synechiae develop and lead to permanent interference with drainage. Increasing narrowness of the angle, determined by gonioscopy, is an indication for operative interference, particularly when accompanied by other signs of progression.

The type of operation to be performed depends largely upon the case at hand. Iridectomy should be reserved for the early cases where the pathologic changes are at a minimum. When peripheral anterior synechiae have developed some form of filtration operation is necessary. Trephining is not satisfactory in this type because many times it fails to produce a filtering ciactrix due to the peripheral anterior synechiae, and, furthermore, there is frequently delayed restoration of the anterior chamber in this type of case which also makes trephining inadvisable. The iridosclerectomy of LaGrange has similar disadvantages, though they are, perhaps, not so marked. Both iridencleisis and the flap sclerotomy produce good results in this type of case and one or the other should be employed.

Chronic Wide Angle Glaucoma

The chamber is of normal depth and the angle appears to be open. In this type cyclodialysis has been advocated by some surgeons. This operation does not reduce the tension to such a large extent as does one of the fistulizing operations. It may be employed where the tension is not much elevated, but this brings up the question as to whether medical means would not work as well in this type of case.

In early cases of the disease iridencleisis or flap sclerotomy will work well when the tension is not elevated above 45 mm. Hg. However, when the tension is considerably elevated the trephining procedure should be considered along with the LaGrange iridosclerectomy. Both of these procedures will give more drainage than the inclusion operation or the flap sclerotomy and it is largely a matter of individual choice which of these two operations the surgeon selects. Goniotomy has been advocated for this type of glaucoma but in the writer's opinion it should be reserved for early cases of congenital glaucoma.

PROGRESSIVE FIELD CHANGES IN CONTROLLED GLAUCOMA

The problem of progressive loss of visual field following a successful filtration operation in glaucoma is one that has plagued ophthalmologists for years. The general consensus seems to be that these changes are due to an irreversible vascular process

which is set up while the tension is above normal limits and has progressed sufficiently so that when the tension is reduced, either by surgical or medical means, there is no regression, but apparently a continued progression of the vascular process.

Satisfactory pathological observations have been made on the ocular vascular system in few, if any, early cases of primary glaucoma. Duke-Elder[30] has stated that there is a vascular stasis and quotes three individual case reports by different workers in which all showed evidence of circulatory stasis and vascular lesions, either of periphlebitis or endophlebitis of the episcleral or vortex veins, with areas of leukocytic infiltration. Knapp,[31] in reporting on cases of atrophy of the optic nerve with cupping and low tension, states that "atheromatous carotid arteries cannot alone cause this descending atrophy, but the condition must be caused by simultaneous circulatory disturbances in the optic nerve from arteriosclerotic vascular changes." Best[32] called attention to the fact that arteriosclerotic changes in the small nutrient vessels may damage the optic nerve, while Siegert[33] and von Stief[34] believed that the cause of optic atrophy in cases of "pseudoglaucoma" are the result of arteriosclerotic changes in the vessels supplying the optic paths. LaGrange and Beauvieux[35] found sclerosis and obliteration of the small nutritive vessels of the nerve in several cases of primary glaucoma. Loewenstein[36] demonstrated changes in the walls and thromboses in the small vessels of the optic nerve producing cavernous degeneration and sclerotic plaques. He concluded that the degenerative changes found in the nerve in glaucoma are the result of vascular damage with impairment of nutrition rather than the effect of increased intraocular tension.

Rintelen[37] has described the histologic findings in cases of arteriolerotic atrophy of the optic nerve. He believes that sclerosis of the central retinal artery has little or no effect on the nerve and that the damage in these cases is due to sclerosis of the small nutrient vessels. Vail[38] states "it is entirely probable that vascular disease of the nerve may account for the progress of cupping, atrophy, and field changes that frequently occur after the ocular hypertension has been quite controlled in true glaucoma, especially in the aged."

In 1948 the writer[39] gave a preliminary report before the meeting of the American Ophthalmological Society on "The Effect of Dicumarol on the Visual Fields in Glaucoma." At that time nine cases of advanced primary glaucoma were reported. The tension in these patients had been controlled by operation but in spite of a normal tension the field changes had shown a constant progression. The use of dicumarol was predicated upon the fact that it increases the prothrombin time, thus decreasing the clotting ability of the blood, and, as has been shown by Bingham, Meyer and Pohle,[40] Wright and Prandoni,[41] Bollman and Preston,[42] and Townsent and Mills,[43] the drug causes a widespread dilatation of the capillaries, arterioles and venules.

Of the nine cases cited in the preliminary report six obtained benefit from dicumarol some months or years after the tension had been brought under control by surgery, although after the tension had been controlled they showed progressive loss of field until the treatment with the anticoagulant. One of the nine cases had a course of dicumarol immediately following operation and five months later had a second course, following which there was marked improvement in the fields. The remaining two patients had dicumarol immediately following operation with improvement in the visual fields; therefore, it is impossible to say whether dicumarol was the effective agent in the gain in these latter two cases or that surgery played the important role.

Since the time of the preliminary report several other cases of primary glaucoma which meet the criteria established for the use of anticoagulants, that is, tension within normal range and progressive loss of field in spite of the low tension—have undergone the treatment. While it is far too early to come to any definite conclusions about this treatment, suffice it to say that well over half the cases in the writer's practice who have received the drug have shown improvement in the fields. It is believed that the method is well worth trial throughout the country, for, while no claims are made, nor can be made, for it at this early date, it can possibly prove to be one ray of light in the otherwise dark field of the therapy of the visual fields in primary glaucoma.

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THE ALCOHOLIC PROBLEM*

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The alcoholic problem is, and has been, a challenge to the medical profession and especially to the field of psychiatry; certainly, thus far, we can lay no claim to fame for having conquered it.

The problem is primarily a medical one but it is also a social and economic one. It is my opinion, and there are few who will take issue with the statement, that every alcoholic is a psychiatric case. It is not always possible to discover the reason that an individual drinks to his detriment, but there is always a cause. Alcoholism is simply the symptom of the disease. Thus far, the results of the therapy are disheartening.

The problem is an increasing one and the prevention, as well as the treatment, should have the active support of every branch of medicine. Our profession can aid in the prevention by attacking the problem in its early stages and by supporting community programs, church activities, and the Alcoholics Anonymous organization, giving this type of help our medical support and guidance.

It is probably well at the outset to define an alcoholic. Diethelm says a person may be considered as suffering from alcoholism if he has become dependent on the use of alcohol to a degree that interferes with his success in life, and if he is unable to recognize this fact, or to abstain from the use of alcoholic beverages in an amount injurious to him.

Factors which enter into the treatment of an alcoholic are varied. Some of them are the level and quantity of the patient's intelligence, the level and quantity of his emotional maturity, the quality and intensity of the individual's desire to stop drinking, the presence or absence of any major or minor psychiatric illness, his life problems, and his reaction to varied emotional strains, whether at home or at work which may be too heavy for him to cope with. His occupation, his social contacts, his family situation and his physical illnesses are all important and must be properly evaluated at the onset.

The alcoholic must gain a thorough understanding and insight of himself as a person and of his particular situation in life. He must be completely sincere in his desire to stop drinking and must admit to himself, to his family, and to his physician that alcohol is a problem to him and one that he is unable to control. He must clearly recognize that what is food for some is poison and a pernicious drug for him, and that alcohol, at all times and under all conditions, produces unhappiness for him. The alcoholic must know that the motive behind his drinking is some form of self-expression, some desire to gratify an immature craving for attention, or to escape from an unpleasant reality in order to get rid of a disagreeable state of mind. He must be convinced that any reasonable and sincere person who is willing to make a sustained effort for a sufficient length of time is capable of living without alcohol. He must resolve to tell the truth to his family and to his physician without waiting to be asked, and he must be equally honest with himself. The alcoholic, having above average intelligence as a rule, should realize from his past experience that drinking means a failure in life, whereas abstinence would likely mean success. He must be impressed with the knowledge that his real goal in life is success, efficiency and contentment, and that in his case his goal cannot be reached without abstinence. If he is able to stop drinking he must not regard himself as a hero or martyr and make unreasonable demands on his family to gratify his every wish. He should be tolerant of others who drink moderately or excessively and not shun those friends who do imbibe socially. Many alcoholics who stop drinking avoid their friends who do drink moderately and appear to be ashamed to admit that they are unable to take a drink, and may feel self-conscious in the presence of their friends because they are unable to drink. On the other hand, the opposite is quite true. Most moderate drinkers respect a person all the more who abstains either because he is unable to handle whiskey or because he does not like it. The alcoholic should be taught to take his life "in stride", to accept success as well as failure without too much elation on the one hand and depression on the other, for the reason that unpleasant experiences can serve as a good excuse to take a drink

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and successes may do the same. It is easy for an alcoholic to become discouraged early in his fight against the habit and even though he may "stump his toe" a time or two, it is not sufficient evidence for one to feel that the cause is hopeless. Many alcoholics get a sense of security in the early period of their reorganization when the premature feelings of victory occur—at this time he should be on his guard.

It has been said, once a man has passed from normal to abnormal drinking, that he can never learn to control his drinking; in this statement I do not concur, but it is advisable to warn the alcoholic that for him to ever attempt to drink again is a dangerous procedure. Many alcoholics use their alcoholic ancestry as an excuse for their drinking but it is not a good reason. Small quantities of alcohol such as a glass of wine or a bottle of beer must be avoided. He must not be told that he can drink any quantity of intoxicants, certainly not until he has been abstinent for several years and even then, as we have stated, it is a dangerous procedure. Alcohol does not sharpen his wit and intellect—it is indeed a false friend in that regard.

The excessive use of alcohol has probably caused more heartaches and trouble than any other one thing in the world. On the other hand, its temperate use has given much pleasure and happiness to many. Contrary to the common belief, alcohol is beneficial to the middle-aged and aged—it eases tension, relaxes the nerves, helps support the circulation, and reduces blood pressure. Alcohol may be a dangerous medicine when used to ease fatigue, to boost one's spirits or make one forget.

There are three quarters of a million alcoholics in this country. In addition, there are said to be three million so-called heavy drinkers, many of them potential alcoholics, whose efficiency is materially altered by it, which causes a heavy toll to industry. It has been said that the average American spends more than 4% of his income on hard liquor and that the cost of alcoholism in one year in the United States far exceeds $12,000,000,000 and that the cost exceeds two-thirds of the cost of the care of all physical illnesses.

It is a healthy omen to note that the legal profession has begun to consider alcoholism as an illness and that treatment rather than corrective measures are indicated. Care and prevention, and not punishment and incarceration, should be encouraged. In the field of prevention it must be remembered that prohibition is not the answer; this "noble experiment", as all of us know from experience, has proven a dismal failure.

To properly treat the alcoholic one must understand the alcoholic as a person. Each of these individuals is different and there is no fixed personality type although there is similarity in all of them. It is most important to understand the patient's life situations so as to be able to understand why he is reacting as he is. The attitude of the therapist must be a tolerant one. Some authorities claim that he must be a teetotler himself to obtain the best results. He cannot be dogmatic and his approach must be flexible and not dictatorial. These individuals, as a rule, have better than average intelligence and practically all alcoholics are attractive, nice people when sober. Therefore, his intelligence should not be insulted by treating him without consulting him about the procedure. If the patient's cooperation is not had and he has no real desire to get well, you are wasting your time in trying to help him with his problem. The procedure in the committed case, of course, must be different and in the one who does not admit that he needs or desires help. Institutionalization is often necessary so as to make him inaccessible to alcohol while he is being made sober, in the hope that when not under the influence of alcohol he will be more reasonable and more cooperative to treatment. My experience has been that the result is invariably poor when the individual is not willing and sincerely anxious to be helped.

The alcoholic has a poorly integrated type of personality; he is one who does not withstand frustrations and gives evidence of rather marked emotional instability. He is frequently in the early stages of a psychosis, more commonly dementia praecox, or he may have a constitutional defect on a psychopathic basis. He may be a cyclothymiac and drink when depressed. Others, and I saw one recently, drink when elated. The psychoneurotic individual is probably the most common personality disturbance who resorts to alcohol to ease his tension and help him escape the problems of life.

O'Hollaren and his co-workers have reported results obtained in 23,023 cases of alcoholism over a period of ten and one-half years with the use of conditioned reflex treatment. At the close of their series in 1945, 44.8% were abstinent; of that figure 92

cases were treated a short time after relapse who have since remained abstinent, which would increase the rate to 48.8% for the entire series. His statistical analysis is interesting in that it reveals 85% of their patients treated by this method have remained abstinent six months or longer, 70% for one year, 60% for two years, 50% for three years, 40% for four years, 30% for seven years, 24% for ten and one-half years or longer. Their relapsed patients remained abstinent for an average period of slightly more than eleven months before resuming drinking, and the figures demonstrate that even in the cases of relapsed patients treatment was worth while.

It is my belief that the question of excessive drinking may possibly be controlled by placing in alcoholic beverages before they are bottled a sensitizing substance similar to Antabuse which would enable the average individual to take two or three drinks before feeling the disagreeable effects of the drug. In that way convivial drinking could be indulged in by all without fear of drunkenness or chronic alcoholism due to the disagreeable effects occasioned by the ingestion of more than a moderate amount of alcohol. The individual tolerance to the sensitizing drug would vary considerably as does the individual tolerance to alcohol.

The conditioned reflex procedure has been used for many years and has moderately been successful as a drug therapy. The technique is as follows: The patient is given this treatment after a period of several days in which he has been free from alcohol or sedatives. The treatments are given in the morning before breakfast in a separate room in which is set up the different types of alcoholic beverages that the patient usually imbibes. For psychological effects, some clinics and hospitals have erected in the treatment room a bar, including the rail, stools, sawdust and a mirrored buffet on which there is an array of popular whiskeys and other alcoholic beverages. At the outset of treatment the patient is given two large glasses of warm water containing a small amount of oral emetine. This is followed by an injection containing emetine, pilocarpine and ephedrine. He is given a small sample from each of the bottles of whiskey in rotation, allowing him to taste and smell the beverage only—he must not be allowed to swallow it. This is continued up until the point that he becomes nauseated and vomits and when the maximum level of nausea is reached the stimulation is discontinued. The above is characteristic of the first treatment day. On the next and subsequent days as nausea approaches the patient is allowed to drink the beverages in turn but not until the therapist is sure that ingestion will induce vomiting. This procedure is repeated for about eight days. On the final day the procedure is repeated without the use of emetic drugs. The patient should receive reinforcing single treatments at six weeks, three months, six months, and one year after the initial treatment course.

Several authors have reported encouraging results in chronic alcoholics with the use of a sensitizing drug commonly known as Antabuse (tetra ethyl thiuram disulphide). The scheme of treatment is as follows:

A careful physical examination is made to determine the patient's medical status as the use of the drug is not without some danger. There have been reports of deaths and every therapist has experienced some violent reactions which are often quite extreme. The drug is not toxic even in large doses unless ethyl alcohol, paraldehyde or some similar chemical is imbibed. Liver damage should especially be looked for and, if present, is a contraindication. It is the opinion of most workers that the patient should be started on the drug while in the hospital so the reaction can be observed and controlled. He is given 2 grams of Antabuse the first day, 1½ grams the second, 1 gram the third, ½ gram the fourth and subsequent days. On the fourth day he is given 50 cc. of whiskey and his blood pressure, pulse and objective sensations are recorded for approximately two hours. He may be given intravenous fluids and cardiac stimulants such as adrenalin should the blood pressure fall to dangerous levels and remain there. The usual response is a marked flushing of the face which may extend into the lower trunk and extremities, and may effect the entire body, conjunctival injections with tearing and distention of the face, head and neck veins. There is immediately a slight rise in pulse rate and systolic blood pressure, followed within a few minutes by a precipitous drop, frequently to shock levels. There is a widening of the pulse pressure, tachycardia and a water-hammer type of pulse. At this phase there may also be an apical systolic murmur. The patient will complain of palpitation, of a rather vague uneasiness, and he eventually may lose consciousness.

Other subjective descriptions of the experience vary but are uniform in that all sensations are quite unpleasant. There may be mild intermittent nausea and at times one or two episodes of vomiting. The more dramatic symptoms usually reach their height at about 30 to 45 minutes following the ingestion of the alcohol and continue for approximately an hour. A strong odor of acetaldehyde may be noted on the patient's breath during the treatment. There is a gradual return to normalcy over the next three to four hours, followed by feelings of fatigue and drowsiness. On the fifth day the daily dose of .5 gram Antabuse is resumed and continued for rest of hospital stay, and is to continue after discharge from hospital for a period of one to two years. Blood and urine studies should be made at regular intervals following treatment in hospital.

Insulin subshock and electric shock therapy have been used without gratifying results in the treatment of alcoholism. It should be remembered that psychotherapy is essential in the treatment of alcoholics if success is to be expected.

Part of the total approach to the problem of alcoholism is being studied by several university hospitals. Among the earliest of these setups was that instituted in Virginia at the Medical College of Virginia Hospital following an authorization by the State for this investigation. This is run as a combined in-patient and out-patient service for the study of alcoholics. The program began on October 16, 1948, and at present consists of a twelve bed hospital service as well as an out-patient department. There have been 212 cases studied thus far with 119 of these being in-patients. There have been roughly 2,500 patient interview periods. When it is possible these patients are seen in a preliminary interview, some carried entirely as out-patients and the others treated initially in the hospital. These patients are selected in accordance with their desire to receive help. There is an attempt made to study the distribution of patients as to age, economic status, educational background, alcoholic habits and previous attempts at treatment. All of these patients receive medical, psychiatric, and psychological investigations. In addition, any special diagnostic procedures deemed advisable are performed. They are studied from the standpoint of the effect of alcohol on the body at the same time that treatment is instituted. Their symptoms of acute alcoholism are treated first by the accepted therapeutic procedures. They are given psychotherapeutic interviews routinely and in addition there are daily sessions with the group. The usual hospital stay is about two weeks and the patients are followed as out-patients following their release. The follow-up treatment includes attention to diet and vitamin intake. Patients are also given Antabuse through these facilities according to the method outlined elsewhere in this paper. It is the purpose to follow all these patients for a period of one year.

No dissertation on the question of alcohol will be complete unless the aid the Alcoholics Anonymous has given is mentioned. Their work has been valuable and stimulating. Although they cannot help all alcoholic persons, it is important to recognize that its members have helped a good many. Just how it works no one exactly knows, but they use in their therapy a composite of medicine, psychiatry and religion. They accept alcoholism as a disease without moral stigma; they warn the alcoholic person that at all times he is just one drink removed from his disease. They provide friendship and companionship on an acceptable social level. The alcoholic is no longer an outcast; when he enters membership they try to teach him to live without fear of the future. An individual member reaches out to help his fellow alcoholic addict to sincerely try to stop drinking, thus utilizing the strong bond which exists among persons with this addiction. They practice group therapy including testimony, confession and a challenge to the addict to understand his condition, and they attempt to show him a way to do something about it. They use individual psychotherapy in which a former alcoholic counsels him for spiritual power free from restrictions of organized religion. They stimulate his ego and teach the alcoholic that he is someone and not just a "drunk". He sees men and women who had reached the lowest rung of the social ladder once again enjoying a life of confidence, social acceptance, and established successfully in their vocations. He is stimulated to emulate them.

We have attempted in this paper to give you an over-all picture of the problem of the alcoholic and have made certain suggestions as to therapy. The problem will probably never be satisfactorily solved but it is hoped that the studies being made at the various centers will add something worthwhile to our armamentarium.

PREGNANCY AND HEART DISEASE

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and
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Nothing is more pathetic than a young woman desirous of children who has been frightened from pregnancy by some overzealous physician telling her she has a heart murmur. The mortality rates of pregnancy with heart disease, although somewhat lower in the past few years, are also pathetic. A happy medium must be found. This can be done only by stricter examination of those who wish to become pregnant, or are already pregnant, and by closer supervision throughout pregnancy.

A review of a small part of the literature concerning pregnancy and heart disease has been made, and the incidence, etiology, a discussion of normal findings in pregnancies that may be misleading, and a clinical study outline are given below.

White states that about 4% of pregnant women have cardiac signs or symptoms, one-half of these (2%) having organic heart disease.[1] Other series do not vary a great deal. Stromme and Kuder in 1946 found 720 cases of heart disease in 23,858 pregnancies, or 3.02%.[2] Up until the period of sulfonamides and antibiotics cardiac disease accounted for about one-tenth of all deaths during pregnancy, being exceeded only by hemorrhage, puerperal sepsis, and pneumonia.[3] With the present use of these drugs the ratio of cardiac deaths is even higher, the number of infectious deaths having dropped sharply.

Statistics as given by Evans[6] infer that when a person with heart disease survives one or more pregnancies prognosis for further pregnancies is good. His mortality rate was 15% in primiparous patients, and 2% in multiparous patients.

Mitral heart disease caused by rheumatic fever is the leading cause of heart disease in pregnancy. Other causes are congenital heart disease, hypertension, luetic heart disease, and thyrotoxicosis.[1] Another cause not given in textbooks, but which should be considered, is coronary disease. In recent years more and more coronary deaths are being reported in young people.[4,5] One case of myocardial infarction with typical electrocardiographic changes during labor has been seen by the author in a woman 32 years old.[7] No doubt other cases of sudden death during pregnancy and labor have been due to this.

Pregnancy definitely puts an extra burden on the heart. The cardiac output is increased 50% near the ninth month,[8] and the blood volume is increased 42%.[9] Thus, it is exceedingly important to examine every pregnant woman carefully for heart disease and to determine whether those having heart disease are able to go to term.

As elsewhere, nothing takes the place of a careful history and a thorough physical examination. The history is probably the most important item in the clinical workup of those pregnant patients who are being studied for heart disease. It is important enough for the New York Heart Association to base its classification upon the history of the past and present disability, and not by physical examination.

The various laboratory procedures for the examination of the cardiovascular system, e.g., electrocardiography, orthodiagrammatic studies, determinations of venous pressure, etc., are helpful, but none of these gives a true indication of what the heart will undergo during the strain of pregnancy. The history does give some index, that is—those patients who may have a murmur, their heart is moderately enlarged on fluoroscopy, or have stable electrocardiographic changes—if they say they enjoy swimming or a set of tennis without having dyspnea or anginal pain, then much more insight has been gained with a few questions than by time-consuming and expensive procedures.

Needless to say, the physical examination should be complete on all pregnant women. So often the physical examination on the first prenatal visit is limited to the weight, a peek at the tonsils, a hurried auscultation of the heart and the blood pressure measurement, whereas a complete examination might reveal other findings that would increase the index of suspicion for heart disease. It must be remembered, however, that pregnancy causes changes that may be misleading on physical examination. Anemias accompanying pregnancy may cause physiological murmurs, and varying degrees of ankle edema

may normally be present. The pulse rate is increased up to the seventh month when it falls to normal rapidly.[10] Extrasystoles are more prone to occur because of increased intra-abdominal pressure and excursion of the diaphragm is limited for the same reason.

If the history and physical examination reveal evidence of heart disease and the routine laboratory studies of complete blood counts, serology, and urinalysis have been made, then the special studies of the patient should be carried out. This should consist of an electrocardiogram, venous pressure, circulation time, blood urea, orthodiagram or 6 foot x-ray plate, vital capacity, and possibly a B. M. R. determination.

It is to be remembered that the venous pressure (arm) and circulation time of pregnant women fall in normal limits[10] and thus these studies can be as useful as in non pregnant cardiac patients.

Careful interpretation of increased heart size or x-ray must be made, as Landt and Benjamin have shown in a series of 19 pregnant women[10] that during the middle months of pregnancy the diaphragm is elevated on both sides on an average of 2 cm. above normal with an increase of the oblique and transverse diameters of the heart of .5 cm. to 1 cm. over normal size. The anterior posterior diameter of the heart is increased about 1 cm. over normal. This, of course, is not a great difference, but it does show the heart to be changed enough that careful measurements are important, and as this is relatively a small series of cases wider variation of normal is conceivable.

Vital capacity studies are perhaps of the least value because of the difficulty of differentiating whether the pregnancy or heart disease is the cause of lowered readings.

The electrocardiogram is an important adjunct in the study of heart disease in pregnancy as in heart disease elsewhere. In pregnancy its usefulness lies mainly in the interpretation of arrhythmias and in the diagnosis and evaluation of acute carditis, especially rheumatic fever. Prolonged P R interval measurements have long been an important criterion for acute rheumatic myocarditis. Recently it has been shown that the Q T interval is prolonged in all cases of rheumatic carditis.[11] Benjamin, in a recent series of 50 normal pregnant women using Taran's modification of Bazett's formula, found the corrected Q T intervals all below the commonly accepted normal upper limit of .425 sec.[12] Thus this measurement is of considerable significance in pregnant women suspected of acute rheumatic fever as in nonpregnant women.

Electrocardiograms in pregnant patients have certain normal changes. They usually show a shift of the axis to the left in the last trimester and the amplitudes of the electrocardiogram are less as the diaphragm is displaced upward with rotation of the heart.[13] Leads I and II tend to remain constant while lead III and the chest leads undergo changes as pregnancy progresses.

Some of the changes that have been found in normal pregnancy[9] are: Gradual inversion of T 3 from the fourth to the ninth months, decrease in voltage of the Q R S complex in lead III, inversion of Q R S complexes in lead III, small Q 3 waves, slurred Q R S complexes in lead III, shifting of the S T segment in lead IV, and T wave changes in lead IV. As stated above all these are the result of left axis deviation.

A discussion of treatment of heart disease in pregnancy will not be undertaken, as it is the same as elsewhere for the most part. The main issue is whether those having heart disease should be allowed to become pregnant, and those already pregnant whether they should be allowed to continue. Probably the New York Heart Association's classification is the best criterion as to the outcome of pregnancy in existing heart disease. It is as follows:

Class 1. Patients with heart disease who have no discomfort on considerable exertion.

Class 2. Those with heart disease who are slightly limited in activity because of dyspnea.

Class 3. Those with heart disease who are greatly limited in activity.

Class 4. Those with heart disease who are bed ridden.

Pardee has shown[14] that patients in classes 1 and 2 take very little chance in pregnancy. Patients in these classes should be followed closely and should be delivered spontaneously or by forceps under anesthesia. Class 3 patients and some in class 2 sometimes require treatment for heart failure but can usually be delivered by forceps, avoiding the second stage.[3] Patients in class 4 should be treated for failure and if seen early the pregnancy should be interrupted. At the same time the patient should be

sterilized if she is able to undergo this procedure. Some feel that if class 4 patients improve with treatment they should be allowed to go longer toward term.[3] If seen late in pregnancy it is better to allow patients to deliver spontaneously or by forceps than to interrupt the pregnancy. Cesarean section at that stage should be avoided.[1] Brown *et al.*[15] suggest that patients with heart disease are able to undergo vaginal delivery as well or better than by section because there is a temporary occlusion of the placental shunt during uterine contraction of labor which, according to Burwell's hypothesis, acts as an arteriovenous fistula.

Although an attempt at classifying patients and general rules for treatment are made by various authors, every case must be individualized.

In summary, pregnancy with heart disease has a high mortality rate, but many patients with heart disease can safely have children. Some normal findings in pregnancy are misleading and should be kept in mind. Most important of all, early careful examination of all pregnant women must be made, and extremely close supervision of those with heart disease must be carried out.

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Family Doctors Outnumber Specialists Two to One.

Nearly two out of every three physicians in private practice in this country are family doctors, as is brought out by the American Medical Association's recent count of physicians in connection with its publication of the 18th edition of the American Medical Directory.

The new directory shows that the physicians of the United States are in the following classifications: 72,550 are in general practice and 22,976 are in general practice but give some attention to a specialty; 54,891 limit their practice to a specialty; 12,536 are in federal government service; 9,700 are retired or in fields not related to medicine; 3,737 are in administrative, editorial or other executive positions related to medicine, and 24,887 are interns, resident physicians or full time physicians in hospitals.

The previous directory, issued in 1942, listed the number of physicians in the United States as 180,496. In the 1950 edition the number is 201,277, an increase of 20,781 and an average yearly gain of 2,598 during the last eight years.

Califorinia leads in the number gained, with 16,668 physicians in 1950 as compared with 12,365 in 1942, an increase of 4,303. New York State shows a gain of 2,284; Texas, 772; Pennsylvania, 704; Florida, 634, and Massachusetts, 603.

Among the 24 largest cities in the United States, New York City (including Brooklyn) is first in physician population with 17,915 physicians. Chicago is second with 7,477; Philadelphia is third with 4,894; Los Angeles is fourth with 4,183; and Boston is fifth with 3,388.

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: B-80770

This 76 year old white male was admitted to the Medical Service of the Medical College of Virginia Hospital on March 20, 1950, with the chief complaints of weakness and abdominal pain. He stated that he had been perfectly well up until about three months previously when just before Christmas he developed a cold. This cold was severe and was accompanied by a productive cough with moderate sputum, but no blood. He was treated by his local doctor with penicillin tablets, but the cold seemed to persist. He then began to lose his appetite and become weak. Gradually over a period of three months he became progressively weaker and had pronounced anorexia. About two months before admission to the hospital he began to notice postprandial regurgitation of undigested food, about 15-20 minutes after eating, but there was no difficulty in swallowing. One month before admission to the hospital he became completely confined to bed and noted the gradual onset of aching abdominal pain which was slightly worse in the right upper quadrant and radiated through to his back. This had no particular relation to eating. He then began to notice light-colored stools and dark urine and whereas the dark urine has persisted to the time of admission, there was an occasional normal colored stool, though most of them were very light in color. For several days before entry to the hospital the patient noticed general pruritus and he was told by a neighbor that he was jaundiced. He lost about 75 lbs. during the present illness. There was no history of bloody or tarry stools and there were no G-U symptoms. He had no fever, but noticed an occasional chill during the month prior to entry. The remainder of the patient's history was essentially non-contributory.

Physical examination on admission to the hospital revealed a well developed, but very poorly nourished and deeply jaundiced, white male who was lying propped up in bed in no acute distress. Temperature 101°, pulse 110, respirations 22 and blood pressure 140/100. The skin was markedly icteric. There were multiple epitheliomata scattered over the face and there were linear scratch marks scattered over the skin of the body. There were a few shotty lymph nodes in all areas, but there was no significant adenopathy. The mouth was negative except for an atrophic tongue and cracks at the corners of the mouth. The heart and lungs were not remarkable. Examination of the abdomen revealed that the liver edge was palpable 3-4 finger breadths below the right costal margin and felt soft. There was no tenderness. The spleen and kidneys could not be felt. The colon was easily palpable throughout. Rectal examination revealed no hemorrhoids and the prostate was small. Feces appeared to be acholic. Examination of the extremities was not remarkable except that the palms of the hands were very pink in color.

Laboratory Data: Urinalysis on entry was essentially negative except that the urine was positive for bile and this was confirmed at subsequent examinations. Initial blood count showed a hemoglobin of 16 grams with a red count of 5,200,000, white count 13,200 with 70% polys. A serum flocculation test was negative. Liver function studies showed the following results: Cephalin flocculation negative, serum protein 6.72, albumin 3.0, globulin 3.7, serum bilirubin direct 11.7, total 19.6. BSP no abnormal retention. Prothrombin time 14 seconds, control 12 seconds, concentration 60%.

Course in the Hospital: The patient was studied on the Medical Service for four days, after which he was transferred to the Surgical Service in preparation for operation. While on the Medical Service an x-ray of the chest and a gastro-intestinal series were obtained. He was given large doses of vitamin K and after transfer to the Surgical Service was given supplemental glucose parenterally. He was started on penicillin on the 9th hospital day and was operated on the same day. Post-operatively the patient did poorly and he died on the 7th post-operative day.

Discussion by R. C. Siersema*.

The protocol is relatively brief. I shall use it as a guide for our discussion. We are dealing with a man, aged 76, admitted to the Medical Service of the Hospital on March 20 of this year, with chief complaints of weakness and abdominal pain. He stated that he had been perfectly well until about three months previously, when just before Christmas 1949 he developed a cold. This cold was severe and was accompanied by a productive cough with moderate sputum, but no blood. He was treated by his local doctor with penicillin tablets, but the cold seemed to persist.

It would be my impression that perhaps his term of illness very definitely started at that time, that the cold was severe, and that it lingered on because he had started to go downhill—his resistance to infection perhaps being definitely lessened from the earliest phase of his illness. He then began to lose his appetite and became weak. Gradually over a period of three months he became progressively weaker and developed marked anorexia.

Up to that point we are dealing with an elderly man who was apparently going downhill. About two months before admission to the hospital he began to notice postprandial regurgitation of undigested food, about 15-20 minutes after eating, but there was no difficulty in swallowing. One month before admission to the hospital he became completely confined to his bed, due to the gradual onset of an aching abdominal pain which was slightly worse in the upper right quadrant and radiated through to the back. This pain had no particular relation to eating. He then noticed light-colored stools and dark urine and, whereas the dark urine has persisted to the time of admission, there was an occasional normal colored stool, though most of them were very light in color.

It might be well for us to state at this time that perhaps there was a significant point being brought out in that sentence; namely, in a person who apparently has had a profound jaundice, even though the biliary tract might now be open, the dark colored urine would persist because of the depth of the jaundice and one would expect dark colored urine to continue for a period of days after the obstruction had disappeared. It would seem at that point as though there surely must have been a ball valve-type of obstruction, which at times completely blocked off the flow of bile, and at other times permitted it to pass through.

For several days before entering the hospital the patient noticed generalized pruritus, and he was then told by a neighbor that he was jaundiced.

The question of the pruritus might well be another point in favor up to this time of an obstructive type of jaundice, because I think that an obstructive jaundice will give rise to pruritus, whereas an acute hepatitis with the association of jaundice might well have no pruritus at all during the course of the disease.

The patient lost about 75 pounds during his present illness. There was no suggestion of his original weight—it might have been that 75 pounds loss of weight might have been a terrific loss of weight in a 72-year-old man; however, if he were particularly heavy at the onset of his illness, it might not be quite so grave.

There was no history of bloody or tarry stools and there were no genito-urinary tract symptoms. He had no fever, but noticed an occasional chill during the month prior to entry. I think in that statement we might well have an error, if he had chills, real chills, surely there was an associated fever even though it was not recorded at the time.

The remainder of the patient's history was essentially non-contributory.

The physical examination on admission to the hospital revealed a well-developed, but very poorly nourished and deeply jaundiced white male, who was lying propped up in bed in no acute distress. Temperature was 101, pulse 110, respirations 22, and blood pressure 140/110. The skin was markedly icteric. There were multiple epitheliomata scattered over the face and there were linear scratch marks scattered over the skin of the body. The epitheliomata, I would assume, had no relationship to the jaundice. The scratch marks, I would assume, were due to the pruritus and the associated scratching.

There were a few shotty lymph nodes in all areas but there was no significant adenopathy. The mouth was negative except for an atrophic tongue, and fissures at the corners of the mouth.

It would be my impression that in the latter we are dealing there with a vitamin deficiency; perhaps that is right.

*Associate in Surgery, Medical College of Virginia, Richmond.

The heart and lungs were not remarkable. Examination of the abdomen revealed that the liver edge was palpable, 3-4 finger breadths below the right costal margin and felt soft. We get the impression that no nodules were felt, that the distention of the liver perhaps took place slowly over a period of time; the absence of tenderness perhaps is a significant point. The spleen and kidneys could not be felt. The colon was easily palpable throughout its course. With a terrific weight loss and loss of abdominal muscle tone, one would expect to be able to feel most of the colon.

Rectal examination revealed no hemorrhoids and the prostate was small. Feces appeared to be acholic Examination of the extremities was not remarkable except that the palms of the hands were very pink in color. That last statement to me doesn't mean too much, and only this morning I commented on that statement to one of our group who is in this room, and got the impression that it is being looked for now in persons with jaundice, and it is perhaps an associate finding more with diffuse liver disease than it is with any obstructive jaundice. This is entirely new to me and I really know nothing about it.

The laboratory data: Urinalysis on entry was essentially negative except that the urine was positive for bile and this was confirmed at subsequent examinations. Initial blood count showed a hemoglobin of 16 grams with a red cell count of 5,200,000; white cell count 13,200 with 70% polys.

It was my assumption that this blood count, the original blood count on admission to the hospital, would have rapidly changed during the period of some several days. I should assume that this patient had a rather marked dehydration at the time of admission, and that there was a fair amount of hemoconcentration present at the time of this count. I am wondering how many counts were done thereafter and what the lowest count was.

In patients who have a neoplasm in the region of the common duct, involving the head of the pancreas, etc., the red cell count and the hemoglobin may stay particularly high; there is nothing to offend the hematopoietic system in the formation of red cells, perhaps at that time; and then, too, there is no blood loss through the gastrointestinal tract. The white cell count of 13,200 with 70% polys more or less goes along, I think, with the history of chills, fever (101 F.), or something like that at the time he was admitted to the hospital and would be best explained by an obstruction to perhaps the common duct and an associated cholangitis.

The serum flocculation test was negative, I assume that was for syphilis; liver function studies showed the following results: Cephalin flocculation negative, and I assume one would be dealing here with an obstructive type of jaundice; serum protein 6.72, certainly normal as the total with some change in the AG ratio; albumin 3, and globulin 3.7, serum bilirubin direct of 11.7, and a total of 19.6—a marked elevation, I would assume that, in thinking in terms of the icteric index, would be perhaps 150 or somewhere in that vicinity. The direct reaction would indicate, I think, an obstructive type of jaundice. The BSP showed no abnormal retention. That indicates we are dealing with a liver that is still functioning quite well. Prothrombin time was 14 seconds, control 12 seconds, and a concentration of 60%.

Course in the hospital: Patient was studied on the Medical Service for four days, after which he was transferred to the Surgical Service in preparation for surgery. While on Medical Service an x-ray of the chest and a gastrointestinal series were obtained. He was given large doses of Vitamin K and, after transfer to the Surgical Service, he was given supplemental glucose parenterally. He was started on penicillin on the day of surgery. Perhaps one might wonder why penicillin might not have been started prior to the day of surgery—there must have been a reason for it. Postoperatively, the patient did poorly, and he died on the 7th postoperative day.

The X-ray Department's interpretation: "There was prominence of the right hilar and lower trunk markings with the lung fields otherwise clear. No metastatic lesions were noted in the lung fields. There was prominence of the aortic knob and arteriosclerotic aorta with slightest prominence of the left ventricle.

"The swallowing functions were normal and no pathologic changes were noted in the esophagus. No hiatus hernia was seen. The stomach was J shaped with active and uninterrupted peristalsis. The duodenal bulb was triangular in shape with no niches or filling defects noted. There was the very slightest widening of the duodenal loop with signs of extrinsic pressure measuring 1X3 cms. along the greater curvature of the duodenal loop.

"At six hours there was a small amount of barium

remaining in the stomach and the duodenum with the circular looping still suggested. The head of the meal was in the proximal ileum. The liver shadow was large and extended downward to the iliac crest."

I think that with the x-ray findings I perhaps should change my opinion or perhaps the original thought. Surely most of these cases are confusing and I am sure that the surgical staff went in with a perfectly open mind, and no definite diagnosis. The one part that is perhaps confusing, if the history is correct, is that during the course of the illness of the patient, the patient describes normal appearing stools followed by clay-colored stools. If there was not a true ball valve obstruction to account for it, one must think in terms of a decrease in edema at the site of the ampulla body to account for it; the red cell count would make one think more in terms of stones in the common duct, and it was my original idea before seeing the x-ray report that we perhaps were dealing with a picture that we don't see too infrequently, that is an elderly person who gradually develops jaundice, has vague, but not too severe pain in the right quadrant; that on exploration one finds the common duct quite dilated, and on opening the common duct, finds a lot of mushy cholesterol type stones and nothing else. Sometimes those patients do well, and at other times they do not. I think with the x-ray findings we must think more in terms of a new growth, tumor mass, in the head of the pancreas, to account for it.

My original idea was that he had an obstructive jaundice from stones in the common duct and, by acting at times as a ball valve affair, allowed bile to pass from time to time into the gastrointestinal tract but without x-ray studies, we can perhaps rule that out; the other is fibrosis of the ampulla of Vater. I don't believe it is that. Another cause might be (but I don't think it is that either) a diverticulum with inflammation in the region of the ampulla of Vater, which at times might present a picture somewhat like this. I think I am more or less forced to say, because of the age of the patient, the gradual onset, and the x-ray findings, that this patient had a carcinoma of the end of the pancreas.

It would be interesting to know, after we have finished, not only what was found but the operative procedure that was carried out. At this particular point, I would have no idea as to the cause of his death; he did die seven days postoperatively. We are dealing, of course, with an old person who would be a bad surgical risk at the very start, who went downhill, regardless of what was done, and died.

Hospital diagnosis: Carcinoma of head of pancreas with obstructive jaundice.

Dr. Siersema's diagnosis: Carcinoma of head of pancreas.

Pathological report: Dr. William H. Talbot*.

In the ampulla of Vater there was a mass measuring about 2½ cm. in diameter, projecting into the lumen of the duodenum. A section was made through this mass, but, before the section was made, a probe was passed from the common duct to the ampulla of Vater. Some resistance was encountered in passing the probe through the mass, and it is not known definitely whether the duct was patent or whether the probe was passed through necrotic tumor tissue. The tumor was very sharply circumscribed, firm in consistency, and white in color. The common bile duct above this tumor mass was markedly dilated, measuring 1 cm. in circumference.

The gall bladder showed markedly thickened walls and had one small pea-sized mulberry-like stone. Microscopically, the gall bladder showed evidence of previous inflammatory process. The microscopic sections of the tumor showed undifferentiated carcinoma.

The liver weighed over 3,000 gms., markedly enlarged, and extended approximately 6½ cm. below the right costal margin in the mid-clavicular line. The left lobe of the liver was almost completely displaced by tumor tissue which was firm and grayish-white in color, and in the right lobe there were also a few scattered tumor nodules with marked vascular prominence in the relatively normal tissues.

There was a serosanguineous peritoneal effusion (2,000 cc.). The spleen showed diffuse infarcts and benign nephrosclerosis. The arteries showed arterial calcification as did the aortic valve. The lungs showed congestion and edema, with minimum bronchial pneumonia.

In Summary: This is a case of carcinoma of the ampulla of Vater with extensive metastasis to the liver.

This tumor could possibly have arisen from either the common bile duct, the tympanic duct, or from the pancreatic tissue in the wall of the duodenum. We do not know the exact origin of the tumor.

*Instructor in Pathology, Medical College of Virginia, Richmond.

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Training School, Petersburg State Colony.

Frequently legislators, laymen and physicians ask, "What is the institution's training program for those mental defectives who return to society?" The following is a brief indication of this program at the Petersburg State Colony. The Training School at this Colony for feeble-minded boys and girls functions primarily to equip high grade defectives to take a place in society. Ninety-five per cent of our 250 population are delinquents. This latter fact emphasizes the need in the local community of early identification and a program at the local level that will enlighten the family concerning its problem and arouse the community to its responsibility to these children.

In general, here at Evergreen, we view our program as consisting of two objectives: (a) to lead these juveniles into a way of living that is consistent with accepted social ethics, and (b) to equip them with capacities that will enable them to maintain themselves in our social structure.

Concerning our first objective, we recognize that most of our youths come from inadequate homes where their needs have not been met; where, in many cases, they have developed a feeling of insecurity, possibly rejection; where there has been no satisfactory media of self-expression and where they have been often misunderstood by parents, teachers and associates. Failures and frustrations have created feelings of inferiority, antagonism, and discouragement in them. It is the reaction to such environment that induces them to compensate in unacceptable ways, bringing them into difficulty with parents and public authorities. So, our employees from staff head to cook's helper, at weekly conferences are counseled in the limitations of the retarded child (feeble-minded), and, especially, of the need for sympathetic understanding of the asocial defective. Hence, by expression and example every employee has a responsibility in shaping the atmosphere in which these children live.

The second general feature of our training at Petersburg State Colony consists of academic and vocational activities and a full recreational program. Below is an organizational outline of the program.

Here, in small groups of their own kind, in an atmosphere of kindliness and encouragement, where competition is not hard, the defective suffers few discouragements. Two to five years of such training will qualify most high grade delinquent defectives to take a place in society, provided they have some sympathetic supervision. We find that approximately six per cent of the asocial defectives require a second period of training.

SUPERINTENDENT

ACADEMIC SCHOOL	RECREATION		RELIGIOUS EXERCISES
(Principal and 5 teachers)	Outdoor	Indoor	(Petersburg Ministerial Union)
1st through 6th primary grades	Baseball-basketball	Gymnastics	
Audio-visual techniques used	Football-soccer	Assorted games	(Attendants)
Class in speech correction	Volley-ball	Radio	
Class in Human Relations	Horseshoe pitching	Moving pictures	
Class in Music—vocal—Bugle Corps, rhythm band	Marbles, etc.	Mixed parties, dancing, etc.	

Vocational School

(4 teachers plus other employees)

BOYS	GIRLS
Housekeeping—Boys tool shop	Housekeeping—beauty shop
Barbershop—Maintenance shop	Cooking classes—sewing
Laundry—farm and dairy activities	Laundry—dining-room and pantry, etc.
Storehouse and truck—dining-room and kitchen	

PUBLIC HEALTH

L. J. Roper, M. D.
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for May 1950 as compared with the same month in 1949 and for the period of January through May 1950 as compared with the same period in 1949, is as follows:

	May 1950	May 1949	Jan.-May 1950	Jan.-May 1949
Typhoid and paratyphoid	4	8	28	32
Diarrhea and dysentery	213	181	1,387	1,280
Measles	626	3,406	1,638	18,827
Scarlet fever	55	40	505	357
Diphtheria	4	9	83	61
Poliomyelitis	2	1	15	10
Meningitis	9	6	69	46
Brucellosis	3	6	26	26
Rocky Mountain spotted fever	4	10	4	11
Tularemia	0	1	18	8

Further Arming to Fihgt Congenital Syphilis

In order to reduce venereal disease in general, and congenital syphilis in particular, the General Assembly has passed a prenatal law, which will become effective July 1, 1950.

The law provides that every physician or midwife attending a pregnant woman shall cause to be taken a blood sample within fifteen days of the first examination by the physician or midwife. The sample must be forwarded to a State Health Department laboratory, or to a department approved laboratory, for a serologic test for syphilis which is recognized and approved by the Health Department. In State Health Department laboratories tests will be made without charge.

The law states that all positive tests must be filed with the Bureau of Venereal Disease Control, where the information will be kept confidential and will not be published except in statistical form and without identification of persons.

For every birth or stillbirth, the physician, midwife, or other person legally authorized to attend the birth, must indicate in the proper place on the birth or still birth certificate whether, to his or her knowledge, the required test was made on the mother during her pregnancy. The certificate, however, must not state the result of the test.

If the first serologic test made indicates evidence of syphilis, the test must be repeated. A physical examination must be made and the patient's medical history obtained. If from this combined information the probability of syphilis still is indicated, the prospective mother must be informed in person as to the nature of the disease and the possibility of transmitting it to husband or baby.

In this case also, one copy of the laboratory report on each test must be sent to the State Health Department, Richmond 19, Virginia.

If the patient is delivered by a midwife, the midwife must make the statement on the birth or stillbirth certificate.

The next laboratory report will provide space to check "Prenatal". If using the present form, the word "Marriage" should be lined out and "Prenatal" written just above.

Future birth and stillbirth certificates will provide space to state whether the mother's blood was tested. On the present forms, however, the statement will be made just below the heavy line and to the right of "FOR MEDICAL AND HEALTH USE ONLY", on birth certificates, and on the back of the stillbirth certificates.

Failure to comply with the law constitutes a punishable misdemeanor.

MEDICAL SOCIETY OF VIRGINIA

MEDICAL SERVICE COMMITTEE

An Approach to the Care of the Chronically Ill.

The care of the chronically ill is increasingly a matter of concern to the family physician. It has become a problem that often involves not only medical care and nursing, but a tremendous financial drain on the family. Therefore, the family doctor is interested in the prognoses as to the possible duraation and the care needed in every case of chronic illness, which may be translated into terms of costs and maximum comfort to the patient.

In the past, the chronically ill have been cared for in the home, which is a most satisfactory arrangement; but changing conditions have changed our domestic situation, and often there is no one left at home to care for the patient. The home offers many advantages in personal attention and economic savings. However, there are many homes that cannot care for any sick person, and if it is to be a prolonged illness, something has to be done. This has brought about the nursing home and other facilities to care for chronic cases.

The nursing home is desirable and has many advantages, but the operation of a nursing home is predicated on financial returns to the operator, who must get reasonable returns for the services rendered. Nursing homes vary in cost but the old saying that "you don't get what you don't pay for" obtains. The nursing home is beyond the financial limit of many of these people, and in the absence of home care the physician is confronted with a real problem in making plans for the chronically ill person or aged person who is dependent on others.

In September 1949, the Patrick Henry Hospital for the Chronically Ill was opened. There is an interesting story behind this institution, which is the result of the good offices of several individuals who were interested in the care of the chronically sick persons in Newport News. The hospital is located on the site of Camp Patrick Henry in Warwick County. The united effort of the people in the community has made this institution possible. The need for medical care and welfare assistance has been united; fifteen counties and towns have joined the project on a per capita basis, which insures a ratio of beds to the contributing units. The hospital accepts both public and private cases. It has a section for colored cases, and all are accepted on the same basis without regard to race, creed, or financial status.

In January 1950, the hospital projected plans to open another unit in which cancer patients can be cared for. It is realized that this type of case will require more medical and nursing attention and more drugs than the ordinary case, and the cost of taking care of this type of case will have to be adjusted on the cost basis. It is a pioneer venture in Virginia in medical care of these unfortunate patients. It will serve a tremendous need, relieve the general hospital bed shortage and afford more beds for the acutely ill, relieve homes of a burden that many are unprepared for, and bring some comfort to the last days of a group of patients who face the inevitable.

The institution bears study as a means to offer reasonable medical service to this increasing group in our population. The plan is not perfect, but it is a working one which may help solve a problem which confronts large areas in rural Virginia. It is operated by a board of trustees and is not under government control. Each of the supporting or contributing units is represented on the board and is entitled to an equal vote in the administrative operation of the institution. The medical services are given by the Warwick County Medical Society.

MALCOLM H. HARRIS, M. D.
West Point, Virginia.

MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

Henry S. Johnson, *Director*

A Challenge.

The following statement appears in the May 15th issue of the *United Mine Workers Journal,* in an editorial explaining the recent defeat of Senator Pepper in the Florida primary: "In 44 years of covering political campaigns in the Nation and in many States, your editor has never witnessed such effective and productive quiet solicitation of votes as demonstrated by Florida doctors, druggists, dentists, hospital staffs, insurance companies, and pharmaceutical representatives, aided and abetted by other professional men."

The editor goes on to state, "On the medical question, labor had better begin to think, because if resentment of the voters to National Medicine in one-third of the States proves as beneficial to reactionary candidates as in the case of Smathers, the problem of repealing the Taft-Hartley Law—so long as both are linked in the Truman program—will be three times as difficult."

The editor's analysis of Pepper's defeat in Florida is keen and acute, and makes it quite clear that the outcome there was the result of an all-out effort by professional men and women.

What Florida has done can be duplicated in Virginia, and New York, and California, and the other states. If the medical profession is regimented, it will be by default, because we fail to demonstrate our convictions in the hustings and at the polls.

I hope the success of our brethren in Florida will strengthen the faint-hearted, resolve the indecision of the doubters, and encourage those who are inclined to give up the struggle and drift with the tide.

The success of the medical and allied professions in Florida in defeating Pepper constitutes a challenge to the medical profession in every other state, and over the nation. What they can do, we can do.

John T. T. Hundley, M. D., *State Chairman*
A. M. A. Educational Campaign

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President—Mrs. C. E. Holderby, Hilton Village
President-Elect—Mrs. C. M. McCoy, Norfolk
Recording Sec'y—Mrs. Thomas S. Chalkley, Richmond
Corresponding Sec'y—Mrs. J. W. Carney, Newport News
Treasurer—Mrs. Kalford W. Howard, Portsmouth
Parliamentarian—
Mrs. Thos. N. Hunnicutt, Jr., Newport News
Historian—Mrs. M. H. Harris, West Point
Publicity—Mrs. Herman Farber, Petersburg

Auxiliary News.

Petersburg

Much progress has been made toward the beginning of the newly formed Hospital Auxiliary for Petersburg Hospital. This unit got its start from our local Medical Auxiliary and we believe it will be one of our most beneficial achievements for the Community. Great interest has been shown and we hope it will continue to grow as it has been doing.

On March 23 we celebrated "Doctors' Day" with a delightful supper for all the Doctors and their wives.

Our regular April meeting was held in the Nurses' Residence at which time final reports on our rummage sale were made and it proved again to be a success.

The last meeting of the Auxiliary before summer was a luncheon May 23. Mrs. Holderby, the State President was our guest and gave a most interesting talk on "Health Education." No business was discussed at this meeting but during the summer our nominating committee of Mrs. Claiborne Jones and Mrs. C. S. Dodd will work on the new slate of officers for the fall.

H. Livingstone

Arlington

The Auxiliary sponsored a luncheon and fashion show March 14th for the benefit of Arlington Hospital.

Doctors' Day, on March 30th, was celebrated by a square dance at the Washington Golf and Country Club.

At the April meeting, Dr. Claire Christman, Arlington school physician, explained the program of sex education planned for the Arlington County schools. Movies on sex education which will be used for the schools were shown.

NORTHERN NECK

The Auxiliary met at The Tides Inn on May 18th, with the President, Mrs. William H. Matthews, presiding.

The program chairman, Mrs. A. B. Gravatt, introduced Mrs. C. E. Holderby, President of the Woman's Auxiliary to the Medical Society of Virginia, and Mrs. C. M. McCoy, President-elect of the Auxiliary. Mrs. Holderby gave a very interesting and informative talk on "Health Education".

Mrs. Paul Pearson was appointed delegate to the State Medical meeting to be held in Roanoke in October. Mrs. Motley Booker was appointed alternate.

The nominating committee for the new officers to be elected at the October meeting are Mrs. C. T. Peirce, Mrs. A. B. Gravatt and Mrs. M. B. Lamberth, Jr.

After the business meeting the members and guests enjoyed a cruise on The High Tide and then a banquet with the Doctors.

RICHMOND

On March 17, we had a Public Health program under the chairmanship of Mrs. J. David Markham, who introduced Dr. Edward M. Holmes, City Director of Public Health. His topic was *Richmond's Medical Care Plan.* The meeting was held as usual, in the Academy Building, and luncheon was prepared and served by Mrs. M. E. B. Owens, Jr., Mrs. Custis Coleman and Mrs. R. B. Lawrence.

Our Auxiliary since last fall has been furnishing two volunteers to the Tumor Clinic every fifth Thursday to act as guides and aides for the patients. Mrs. Fitzgerald Cavedo is chairman of the committee in charge.

The Richmond Auxiliary realized $500 net on its annual money-making project in April. This was a benefit tea at Paxton, beautiful and historic home of Mr. and Mrs. Elam Tanner. Mrs. William H. Harris and Mrs. Charles Troland served as co-chairmen.

The $500 was given to Sheltering Arms Hospital.

At the final meeting of the Auxiliary on May 19, the new officers were installed by Mrs. Latane Flanagan, Parliamentarian; Mrs. Frederick Finch, President; Mrs. Randolph Hoge, President-Elect; Mrs. Custis Coleman, Recording Secretary; Mrs. W. Henry Copley, Corresponding Secretary and Mrs. William H. Cox, Treasurer.

MELBA C. FINCH, *Editorial Chairman*
(MRS. FRED L.)

NORTHAMPTON-ACCOMAC

The ladies were entertained on April 11th at the home of Mrs. Rooker J. White of Keller. Mrs. C. E. Holderby, State chairman, and Mrs. C. M. McCoy, president-elect, were guests of the Auxiliary. Mrs. E. H. Trower presided at the meeting which followed luncheon. Mrs. S. K. Ames reported briefly on the work of the tumor clinic which is held twice a month at the Nassawadox Hospital. Following the business, an informative talk was given by Mrs. Holderby on the General Medical Picture with emphasis on the present day health program.

An invitation was accepted for the Auxiliary to have its July picnic again this year with Mrs. W. L. Cosby at her Silver Beach cottage.

BOOK ANNOUNCEMENTS

You and Your Heart. A Clinic for Laymen on the Heart and Circulation. By H. M. MARVIN, M.D., and T. DUCKETT JONES, M.D., IRVINE H. PAGE, M.D., IRVING S. WRIGHT, M.D., DAVID D. RUTSTEIN, M.D. Foreword by Paul D. White, M.D. Random House, New York. 1950. xi-306 pages. Illustrated. Cloth. Price $3.00.

Breast Deformities and Their Repair. By JACQUES W. MALINIAC, M.D., Clinical Professor of Plastic Reparative Surgery and Associate Attending Plastic Surgeon, New York Polyclinic Medical School and Hospital; Attending Plastic Surgeon, Sydenham Hospital, New York. Grune & Stratton, New York. 1950. ix-193 pages. Illustrated. Cloth. Price $10.00.

Psychiatric Sections in General Hospitals. By PAUL HAUN, M.D., MeD. Sc. D., Assistant Professor of Psychiatry, Georgetown University Medical School. An Architectural Record Book. F. W. Dodge Corporation, New York. 1950. 80 pages. Cloth. Price $4.00.

Amusing Quotations. For Doctors and Patients. Edited by NOAH D. FABRICANT, M.D. Grune & Stratton, Inc., New York. 1950. viii-149 pages. Cloth. Price $3.00.

Sex Without Fear. By S. A. LEWIN, M.D. and JOHN GILMORE, Ph.D. Foreword by Sarah K. Greenberg, M.D. Lear Publishers, New York. 1950. 121 pages. Illustrated. Cloth. Price $3.00.

Woman's Surgeon. The Life Story of J. Marion Sims. By SEALE HARRIS, M.D. With the collaboration of FRANCIS WILLIAMS BROWIN. The Macmillan Company, New York 1950. xx-432 pages. Illustrated. Cloth. Price $5.00.

It is now nearly one hundred years since Marion Sims published his first article upon vesico-vaginal fistula in January 1852, and sixty-seven years since his death from coronary occlusion, November 13, 1883. With the passing years his stature is increasing. At the last meeting of the American Gynecological Society (May 12, 1950) Dr. Joseph Baer used the story of his life and accomplishments for the presidential address. It is high time that there be definitive biography of this pathfinder in medicine. His autobiography is not free from errors and the egotism of the man makes against it. The short biographies that have appeared from time to time since his obituaries, are mainly eulogies. Seale Harris, while evidently an admirer, has given us a true full length picture of the man. While giving him due credit for his many accomplishments, he does not minimize his faults.

Thomas Addis Emmet called Sims the Father of American Gynecology and Paul F. Munde the Father of Modern Gynecology, Seale Harris calls him the Medical Prima Donna of the 19th Century. All three titles are correct but the latter sums up in a phrase the true character of the man. No man had truer or more loyal friends and no man had bitterer enemies. These, in all fairness, were the result of his own temper and egotism. Everyone with whom he worked became an enemy: Bozeman, because he improved Sims' suture; W. O. Baldwin, a fellow partner in a drugstore in Montgomery, on account of some finances; Peaslee, Emmet and Thomas, fellow members of the Staff of the Woman's Hospital, because of disagreement about rules in the hospital. With casual acquaintances and those with whom he was not too closely associated he showed great charm. He hobnobbed with queens and princesses, kings and common men on equal terms. His most engaging characteristic was his lifelong devotion to his wife. Theresa Jones, thoroughbred as she was, loved him when he was a callow, unpromising youth without ambition. She followed him devotedly in sickness and poverty and in his successes and wealth in the swamps of Alabama and the courts of Europe. In all these extremes, she exhibited equanimity and poise, and did much to keep her husband on an even keel, and Sims, to his everlasting credit, requited this love in full measure. Theresa Sims is by rights a great medical heroine. Harris tells her story with sympathetic understanding.

Sims' prima-donnaish vagaries took every possible form. He was tried and censured by the New York Academy of Medicine for violating the code of ethics of the American Medical Association and, shortly thereafter, was elected president of that very Association. In his presidential address he discussed syphilis and called a spade a spade. He greatly shocked his British conferees by advocating anesthesia during coitus in certain aggravated cases of vaginismus. Undoubtedly he was a genius, and a medical prophet, and yet he published an account of curing trismus nascentium by turning the infant to its side. He jealously guarded the nature of the sicknesses of the Empress Eugenie and that of the Duchess of Hamilton, but discussed that of Adelina Patti, after she had gone to Sir James Y. Simpson for treatment. He did not hesitate to advise, through the newspapers, President Garfield's surgeons how to treat abdominal wounds.

However, his achievements far outweighed his vagaries. He was the Father of Gynecology and taught the world how to treat gunshot wounds of the abdomen. He was one of the first to operate for gall stones. He was the founder of the first hospital for women and one that has continued to this day to be a center for investigation of woman's diseases, and he was largely instrumental in founding the first hospital for the investigation and cure of cancer. Such a man can be forgiven a few vagaries. The *"Woman's Surgeon"* has an extensive bibliography and a good index which makes it a useful reference book as well as one well worth reading.

M. P. R.

Harvey Cushing. Surgeon, Author, Artist. By ELIZABETH THOMSON. Foreword by Dr. John J. Fulton. Volume #13, Life of Science Library. Henry Schuman, Incorporated, New York. 1950. Illustrated. 347 pages. Cloth. Price $4.00.

John Fulton who wrote a more detailed biography of Cushing (1946) says in his foreword to Miss Thomson's biography that there is a place for the briefer work just as was for a briefer Life of Osler after the monumental one by Harvey Cushing. My own experience fully bears this out. I have all four books. I read the longer Osler but not Mrs. Reid's

volume. I read Fulton's Cushing as far as the Hopkins' days, when I was interrupted and I have never gotten around to finishing it. After reading Miss Thomson's Cushing, I feel that I must read the longer biography. She tells her story well. Cushing was born in Cleveland of New England ancestry, and it was only natural that he went to Yale for his college training. He went to Harvard for his medical degree and, after serving as interne, or "house pupil", as I believe the proper term is at the Massachusetts General Hospital, went to Hopkins for his surgical training under Halstead. Here he developed a new field in surgery. In Baltimore, he lived next door to Osler, at No. 3 West Franklin Street. He returned to Harvard as Surgeon-in-Chief at the Peter Bent Brigham and finally to Yale as Professor of Neurology and, after reaching retirement age, he became Director of Studies in the History of Medicine, which position he held at the time of his death. His matchless collection of books, along with those of his friend, Arnold Klebs, are housed at the Yale Medical School in a beautiful building designed by his friend Grosvenor Atterbury.

Between his graduation in medicine at Harvard and his death at Yale, he made many trips to Europe and met most of the important people in medicine. The accounts of these trips are as full of interest as a travelogue. When I entered the Medical School, Cushing was away in Europe and Mitchell was resident surgeon. The story we boys heard was that Cushing had been given a leave of absence to study physiology of the brain under Sherrington. When he came back he wanted his place back but Mitchell said that he had no idea of giving up the residency. As both Cushing and Mitchell were noted for their vile tempers we were interested in the outcome of the difficulty, rumors of which we heard from time to time. Mitchell retained the surgical residency and a dog house was built for Cushing as a compromise and given the grandiloquent name of Huntarian Laboratory. He taught us surgery on the dog and was popular with the boys. I can see him now drawing at the blackboard with both hands. (When he had completed his residency, Mitchell located in Washington, D.C. Years later he knocked down a Congressman on the golf course because the Congressman had driven into him, or *vice versa*.)

Miss Thomson has given us a true picture of Cushing. She does not minimize his faults, of which lack of control of his temper was the chief and she has given us a story that anyone, be he medical man or not, will enjoy reading.

M. P. R.

Proceedings of the First Clinical ACTH Conference. Edited by JOHN R. MOTE, M.D., Medical Director, Armour Laboratories. 178 Contributors. The Blakiston Company, Philadelphia. 1950. 624 pages with 414 Illustrations. Cloth. Price $5.50.

This volume comprises the complete report of 52 papers presented at the First Clinical ACTH Conference held in Chicago in October 1949 under the auspices of Armour and Company. This conference was held to bring together all the investigating groups working with ACTH for exchange of data and to arrive at an overall picture of the experimental and clinical results of ACTH administration. The papers are presented as reports of projects in progress and not as final conclusions. The work with ACTH has progressed so rapidly that it seemed highly desirable to make this information generally available as speedily as possible. The papers included have not been previously published.

The various reports cover a wide range of subjects, from observations on metabolic and other effects of ACTH to clinical reports on its use in a large variety of diseases. The data are of a preliminary sort and no final conclusions are presented but it is obvious that stimulation of the adrenal cortex by ACTH produces important effects in many apparently unrelated diseases.

For the investigator in metabolic or endocrinologic disease this volume is indispensable. For the clinician who wishes to keep abreast of the rapid progress in this field these reports afford an up-to-date summary which is not elsewhere available. For the casual reader whose interest in ACTH has been stimulated by newspaper publicity this book is a comprehensive presentation of the present factual data.

It must be remembered that ACTH is not generally available. The limitations of production will restrict its use to the investigative field for sometime to come. These papers are a noteworthy contribution to the study of the adrenal cortex in disease and offer hope of considerable therapeutic usefulness for ACTH. But the physician must not expect to find here an agent that he can use in the daily problems of practice.

H. St. G. T., JR.

EDITORIAL

Sir Ronald Ross (1857-1932)

BEFORE Laveran and Ross, there were many attempts to prevent malaria. Empedocles (c. 490-430 B.C.) is said to have checked an epidemic in Sicily by draining a swamp and since then many have believed that night air and paludal surroundings were not salubrious. Such empiric knowledge, however, was not impressive enough to make the prophylaxis of malaria effective. Even Laveran's discovery of the causative agent of malaria left a gap that had to be filled before his discovery could be used in the prevention of this world wide disease. It enabled one to make an accurate diagnosis and it stimulated research, but until it was known how the parasite gained access to the human body, means of prevention were entirely empiric and amounted to little. This gap was supplied by Sir Ronald Ross.

Ross was born at Almora, India, the eldest of Gen. (Sir) Campbell Claye Grant Ross' ten children. He was sent to England for his schooling. At first he wanted to be an artist but, on his father's persuasion, he studied medicine. Upon graduating from St. Bartholomew's Hospital he failed his L.S.A. After serving in the navy several years, he passed his L.S.A. in 1881 and entered the Indian Medical Service. Here he did nothing of great moment and devoted his spare time to the study of literature. After seven years, on his first leave home, he worked for his Diploma of Public Health, and became an expert bacteriologist. In 1894 when again on leave he met Sir Patrick Manson, who in 1879 had demonstrated that Filaria sanguinis hominis was transmitted by the mosquito. Manson inspired Ross to undertake this study.

The idea that mosquitoes carried malaria was not new. The Sanskrit Susruta has something to say on the subject. The same theory was advanced for yellow fever by Josiah Clark Nott of South Carolina, Louis Daniel Beauperthy, and Carlos Juan Finley. A number of Italians, notably Lancisi, had advanced this hypothesis for malaria. Albert F. A. King was an advocate of the same theory in 1883 and Laveran himself entertained the same belief, but that was not proof, and proof was needed for practical results. It was not until 1879 that Ross succeeded in finding the pigmented forms of the plasmodium in the dappled (anopheles) mosquito, and using birds he worked out the life cycle of the organism. His work was quickly confirmed by a number of Italian investigators as well as by Thayer, McCallum and Opie in this country.

In 1899 he retired from the Indian Service, and after a visit to West Africa to study malaria-bearing mosquitoes, devoted himself to research and teaching. He became lecturer and then professor of Tropical Medicine at Liverpool University. In 1913 he became, in addition, physician for tropical diseases at King's College, London. When in 1926 the Ross Institute and Hospital for Tropical Diseases at Putney was founded in his honor, he became its first director-in-chief.

Ross received many other honors. In 1902 he was awarded the Nobel Prize for Medicine. In 1911 he received K. C. B., and in 1918, a K.C.M.G. He was a Fellow of the Royal Society and was the recipient of its Royal Medal. He was editor of *Science Progress*.

Lord Moynihan called him a medical truant because of his success in literature and mathematics. He published *Poems, Fables and Satires, Lyra Modulata, Sprit of Storm, Child of Ocean,* and *Revels of Orsera* as well as his *Memoirs*.

This is the 14th of a series "Doctors for whom the public should be thankful."

Brookfield, Inc.

ONE of Virginia's oldest eleemosynary institutions is comparatively unknown. This is readily understood when its function—the rehabilitation of unmarried, pregnant girls—is considered.

The problem of illegitimacy is as old as man, and its solution does not seem to be in sight. The church and the law have each tried its hand and have failed. The educators do not seem to be meeting with any startling success. If society can not prevent out-of-wedlock pregnancy, it should at least make the lot of the unfortunate victims easier. As it is, society turns its back on the poor girl, and all too frequently the girl's own family turns against her. Several possibilities are open to her. She may have a criminal abortion performed. This is usually the advice of her "boy friend". This is both dangerous and criminal. The girl's natural impulse is suicide. If she carries her pregnancy to term her obstetric care is apt to be of inferior quality, whereas she needs the best.

Some 70 years ago, Dr. W. W. Parker organized the Spring Street Home in Richmond for unmarried mothers. In 1932, Dr. A. Spiers George left a handsome legacy to the Spring Street Home. When the institution moved from Spring Street to its present location on Broad Street Road, the name was changed to Brookfield, Inc. In a measure, it is a monument to these two physicians.

The Home has always been blessed by a lady board of managers of the highest type. The present plant consists of 90 acres of woodland and farm land and a well planned fire-proof house, with an up-to-date delivery room and nurseries and homelike quarters for the mothers. The girls are assigned, in rotation, duties in the home and the nursery as well as outside work in the garden. This makes them feel that the home is theirs and they keep it spotless. Services are conducted in the Chapel every Sunday by Richmond ministers of different denominations. Every effort is made in this busy, healthful and helpful atmosphere to "graduate" the girls as useful members of society. Not infrequently they are given vocational training in the late puerperium and a surprisingly large number of them turn out well, which fills the superintendent and her staff with joy and satisfaction.

SOCIETY PROCEEDINGS

Williamsburg-James City County Medical Society.

The regular meeting of the Society was held May 12, at Williamsburg, Dr. Joseph E. Barrett, President, in the Chair. After dinner the business meeting was held, at which time a letter from the Medical Society of Virginia regarding a proposed series of post-graduate study sessions was read. The Society members expressed interest and approval, and the secretary was instructed to write a letter, indicating the desire of this Society to participate in such series. A letter from the Medical Society of Virginia was also read regarding the procedure for collection of American Medical Association dues. The President also reported on a letter received regarding an alleged grievance against a member of the local society and asked confirmation of the grievance committee ad interim. The committee named was approved by the Society.

The President reported to the Society a plan for a memorial plaque, to be placed in the old church at Jamestown, honoring one of the earliest physicians of the Virginia Colony. A committee of the State Medical Society, consisting of Dr. Chester Bradley of Newport News, Dr. Wyndham Blanton of Richmond, Dr. Joseph E. Barrett, of Williamsburg, have been selected to arrange for this. The ceremony is being tentatively planned for July,

with the program to be arranged for by the local Medical Society and the Jamestown officials.

A letter was read by the President regarding a report on the Committee of the State Medical Society on broadening the eligibility for membership in the Medical Society of Virginia and its constituent county societies. This letter requested the opinion of the local societies to help guide the action of the House of Delegates at the annual meeting in Roanoke, in October. This matter was discussed at length, but action was deferred on it until the called meeting to be held in June.

The Society approved a proposal to reorganize a Woman's Auxiliary and instructed the Secretary to so advise the State Auxiliary principals.

Dr. Linwood Farley, the Health Officer, announced the opening in Richmond of a Diagnostic Clinic for Heart Disease Cases and explained the admission procedure and scope of the clinic work.

Dr. Thomas D. Walker of Newport News was a guest of the meeting and described briefly the newly opened Chronic Disease Hospital, a joint enterprise of Newport News, Warwick County and a number of other cities and counties in the Peninsula area.

The following officers were elected for the ensuing year: President, Dr. Eleanor H. Beamer Maxwell; Vice-president, Dr. B. I. Bell; Secretary-treasurer, Dr. Granville L. Jones.

After the business meeting sound motion pictures on cardiac physiology, with particular reference to pulse pressures and the electrocardiograph, through the courtesy of Searle Company, were presented by their Mr. Dillard.

A total of eighteen members and guests were present.

Granville L. Jones, *Secretary*

The Southwest Virginia Medical Society

Met in Abingdon on May the 4th, with Dr. Harry M. Hayter of that city, the president, in the chair. At the afternoon session, papers were given by:

Dr. James L. Chitwood, Pulaski—The Antibiotics.

Dr. Thomas C. Todd, Bristol—Some Concepts on the Treatment of Bleeding in the Third Trimester of Pregnancy.

Dr. Frank Sutterlin, Bristol—Human Infertility.

Dr. Robert L. McMillan (guest), Winston-Salem, N. C.—The Use of Quinidine in Auricular Fibrillation.

At the business session which followed, delegates and alternates to the annual meeting of the State Society were elected, and a Woman's Auxiliary was formed with the following officers: President, Mrs. W. A. Porter, Hillsville; vice-president, Mrs. R. L. Hillman, Emory; secretary, Mrs. James P. King, Radford; and treasurer, Mrs. D. S. Phlegar, Blacksburg.

A social hour and banquet followed after which Dr. Samuel P. Asper, Jr., of Johns Hopkins University School of Medicine, spoke on Recent Advances with Propylthiouracil, Radioiodine and ACTH.

There were 80 in attendance in the afternoon and 136 at the banquet and night program. The next meeting of the Society will be hold in Radford in September, the exact date to be announced.

Dr. Andrew F. Giesen of Radford is secretary of the Society.

Norfolk County Medical Society.

At the annual meeting of the society, the following officers were elected for the year beginning June 1950: President, Dr. George Schenck; president-elect, Dr. Walter P. Adams; vice-president, Dr. Eugene L. Lowenberg; secretary, Dr. K. K. Wallace; and treasurer, Dr. J. Franklin Wallace. All are of Norfolk. Delegates and alternates to the Roanoke meeting of the State Society were also named.

Virginia Peninsula Academy of Medicine.

The last regular meeting of the Academy before summer recess was held at the Veterans Administration Hospital, Kecoughtan, May 15th, with an attendance of sixty physicians. Dr. William Parson, professor of medicine at the University of Virginia, conducted a pathological conference. Officers were elected for the coming year as follows: Dr. William A. Read, president; Dr. Will J. Tankard, vice-president; and Dr. Barnes Gillespie, secretary-treasurer.

NEWS

Medical College of Virginia Commencement. The one hundred thirteenth commencement exercises of the Medical College of Virginia were held on June 6th at The Mosque in Richmond. The Commencement Address was delivered by Dr. Robert Archibald Lambert, Formerly Associate Director for the Medical Sciences, Rockefeller Foundation. An honorary degree of Master of Science in general medicine was awarded to Dr. James D. Hagood of Clover. This is the first time the College has awarded this degree and it is believed it is the first time that such a degree has been awarded anyone. Admiral Lewis L. Strauss of Culpeper County was also awarded the honorary degree of Doctor of Science.

Alumni reunions were held on the 5th and 6th. The dedication of the War Memorial Alumni Building was held on the 5th, and this was followed by a social hour and the alumni banquet reunion. The new alumni headquarters was purchased and remodeled as a memorial to graduates of the Medical College of Virginia and the University College of Medicine who died in any war in which the United States took part. The building is the former Maury House at 1105 East Clay Street.

There were ninety-two graduates in medicine; forty-six in dentistry; fifty-two for bachelor of science in pharmacy; six for bachelor of science in nursing education; thirteen for bachelor of science in nursing; thirty-three graduates in nursing; forty-six in physical therapy; four for master of science in physical therapy; one master of science in bacteriology; and one master of science in physiology. The following are graduates in medicine with their hospital appointments:

MEDICAL COLLEGE OF VIRGINIA, Richmond: Drs. Wyndham Bolling Blanton, Jr., Richmond; Russell Vernon Bowers, Richmond; William Wesley Gillespie, Boissevain; John Titus Glick, Jr., Bridgewater; James King Hall, Jr., Richmond; Thomas Bowles Hedrick, Roanoke; Russell Edward Herring, Jr., Richmond; Elma Adolphus Morgan, Jr., Portsmouth; Helen Luella Morton, Richmond; John William Painter, Sylvatus; John William Powell, Richmond; Paxton P. Powers, Staunton; George Gordon Ritchie, Jr., Richmond; Thomas Carroll Royer, Morgantown, W. Va; Harvey Brown Ryder, Monterey; Eustace Henry Smith, Valley Center; John Earle Smith, Highland Springs; John Moore Stoneburner, Richmond; Allan Meyer Unger, Richmond; and William Philip Wagner, Richmond.

STUART CIRCLE HOSPITAL, Richmond: Dr. Eileen Agnes Thorpe, Pawtucket, R. I.

UNITED STATES NAVAL HOSPITAL, Portsmouth: Drs. John Morgan Foley, Fairmont, W. Va; David Charles Forrest, Roanoke; and John Bertrand Rose, Jr., Richmond.

ROANOKE MEMORIAL AND CRIPPLED CHILDREN'S HOSPITAL, Roanoke: Drs. William Burdette Adams, Centralia; Evelyn Patton Daniel, Abingdon; and Griffith Boyd Daniel, Louisa.

LEWIS-GALE HOSPITAL, Roanoke: Drs. Robert Clifton Hughes, Waverly; and Ralph Mason Scott, Parksley.

JEFFERSON HOSPITAL, Roanoke: Dr. Robert Catchings Moore, Jr., Blacksburg.

NORFOLK GENERAL HOSPITAL, Norfolk: Drs. Leroy Parry Bragg, Richmond; Hugh Pearson Fisher, Jr., Quinton; Donald Stover Myers, Bridgewater; and Grady Monroe Strickland, Jr., Clayton, Ala.

DEPAUL HOSPITAL, Norfolk: Dr. James Reuben Holsinger, Broadway.

UNITED STATES MARINE HOSPITAL, Norfolk: Dr. Archie Carlisle Stanton, Jr., Norfolk.

JAMES WALKER MEMORIAL HOSPITAL, Wilmington, N. C.: Dr. George Minson Bullard, Roseboro, N. C.

CHARLOTTE MEMORIAL HOSPITAL, Charlotte, N. C.: Drs. Marion White Fisher, Wilmington, N. C.; and Forrest Edwards Peeler, Belwood, N. C.

CITY MEMORIAL HOSPITAL, Winston-Salem, N. C.: Dr. Robert McClain Jamison, Covington.

REX HOSPITAL, Raleigh, N. C.: Dr. William Harold Johnson, Castlewood.

OHIO VALLEY GENERAL HOSPITAL, Wheeling, W. Va.: Drs. Earl Douglas Allara, Iaeger, W. Va.; John Jenkins Coogle, Rivesville, W. Va.; Robert Calton Cowan, Jr., Morgantown, W. Va.; William Vickers Crabtree, Wellsburg, W. Va.; and Leo Franklin Sherman, Beckley, W. Va.

ST. JOSEPH'S HOSPITAL, Parkersburg, W. Va.: Dr. Ira Connolly, Jr., Parkersburg, W. Va.

CHARLESTON GENERAL HOSPITAL, Charleston, W. Va.: Drs. Dorsey Carlyle Gamsjager, Grafton, W. Va.; Ward Harshbarger, Jr., St. Albans, W. Va.; Harvey Achiles Martin, Keyser, W. Va.;

and Joseph Alderson Smith, Sutton, W. Va.

St. Mary's Hospital, Huntington, W. Va.: Dr. Philip James Winn, IV, Fork Union.

The Brooklyn Hospital, Brooklyn, N. Y.: Dr. Robert Andrew Abernathy, Jr., Lynchburg.

United States Marine Hospital, Staten Island, N. Y.: Dr. Nicholas Ivan Ardan, II, Niagara Falls, N. Y.

Strong Memorial Hospital, Rochester, N. Y.: Dr. Robert Thomas Cauthorne, Richmond.

New York Hospital, New York, N. Y.: Dr. Luke Ralph Rader, Richmond.

City Hospital, Welfare Island, N. Y.: Dr. Charles Nelson Richards, Jr., Lynchburg.

The Charity Hospital of Louisiana, New Orleans, La.: Dr. Thomas William Ayres, Richwood, W. Va.

Sinai Hospital, Baltimore, Md.: Dr. William Maury Bangel, Portsmouth.

United States Naval Hospital, Bethesda, Md.; Dr. Thomas William Tusing, New Market.

Gorgas Hospital, Canal Zone: Dr. William Walter Beckner, Jr., Rockbridge Baths.

Jackson Memorial Hospital, Miami, Fla.: Drs. Douglas Willits Carr, Norton; and Emery Highsmith Honeycutt, Clinton, N. C.

Cincinnati General Hospital, Cincinnati, O.: Drs. Kenneth Lawrence Clark, Charleston, W. Va.; Thomas Leland Largen, Hillsville; Jane McMullen, Wollsburg, W. Va.; and Andrew Jim Pasquale, Williamson, W. Va.

Starling-Loving University Hospital, Columbus, O.: Dr. Robert Noble Counts, Portsmouth, O.

Brooke General Hospital, San Antonio, Tex.: Dr. Thornton Ritenour Cleek, Staunton.

John Sealy Hospital, Galveston, Tex.: Dr. Lee Weldon Shaffer, Jr., Parkersburg, W. Va.

United States Naval Hospital, Charleston, S. C.: Dr. Martin Cade Covington, Sanford, N. C.

Roper Hospital, Charleston, S. C.: Dr. Helen Elizabeth Hall, Raleigh, N. C.

Greenville General Hospital, Greenville, S. C.: Dr. Leroy Webb, Richmond.

Presbyterian Hospital, San Juan, P. R.: Dr. Alberto Manuel Dominguez, Cayey, P. R.

United States Naval Hospital, Philadelphia, Pa.: Dr. Hugh Fitzpatrick, III, Richmond.

Robert Packer Hospital, Sayre, Pa.: Dr. Charles Melvin Garrett, Jr., Weston, W. Va.

Allentown General Hospital, Allentown, Pa.: Dr. Florine Kirk Hampton, Kermit, W. Va.

Sewickley Valley Hospital, Sewickley, Pa.: Dr. Eugene Ernest Mihalyka, Baltimore, Md.

Bryn Mawr Hospital, Bryn Mawr, Pa.: Dr. Lawrence Owen Snead, Jr., Richmond.

Philadelphia General Hospital, Philadelphia, Pa.: Dr. Mary Elizabeth Zumbrunnen, Parkersburg, W. Va.

Mercy Hospital, Pittsburgh, Pa.: Dr. Genevieve June Thomas, Roanoke.

Walter Reed General Hospital, Washington, D. C.: Drs. John William Hesen, Jr., Morgantown, W. Va; and Jay Nevin Wemple, Long Island, N. Y.

St. Elizabeth's Hospital, Washington, D. C.: Dr. Donald Gabriel Siegel, Chicago, Ill.

Fitzsimons General Hospital, Denver, Colo.: Dr. Joseph Haven Hoge, Jr., Pembroke.

Middlesex Hospital, Middlesex, Conn.: Dr. Ellen Katherine Johnson, Enfield, N. C.

University of Oklahoma Hospitals, Oklahoma City, Okla.: Dr. James Laster, Richmond.

French Hospital, San Francisco, Calif.: Dr. Margaret Lee Masters, Canton, China.

University of Minnesota Hospitals, Minneapolis, Minn.: Dr. Mathew E. O'Keefe, Council Bluffs, Ia.

Massachusetts General Hospital, Boston, Mass.: Dr. Stuart Ragland, Jr., Richmond.

United States Marine Hospital, Boston, Mass.: Dr. Robert Dayton Shreve, Glenville, W. Va.

Hackensack Hospital, Hackensack, N. J.: Dr Irma Hope Rivera, Santurce, P. R.

Alumni Association, Medical College of Virginia.

At the meeting of the alumni on June the 5th, Dr. Donald S. Daniel was installed as president, Dr. Roshier W. Miller was elected secretary, and Dr. Harvey B. Haag as treasurer; all are of Richmond. Vice-presidents are: for Medicine, Dr. Ramon Saurez, Puerto Rico; for Dentistry, Dr. Richard Lee Simpson, Richmond; for Pharmacy, R. R. Rooke, Richmond; and for Nursing, Mrs. Sarah Daniel Faber, Lawrenceville.

Scientific Exhibits.

Very excellent and ample space for the Scientific Exhibits at the Hotel Roanoke has been assigned to the Exhibit Committee. The same decorating firm which furnished the booths last year will again

service us. Those who saw the exhibits last year will remember the same equipment is furnished as is used at the A. M. A. Viewing boxes for transparencies are also furnished which are fitted with fluorescent lights.

In order to secure desirable space, all exhibitors are requested to write the Chairman of the Scientific Exhibit Committee, Charles H. Peterson, M.D., 603 Medical Arts Building, Roanoke, for application blanks as soon as possible. This will enable the committee to "block out" the space more efficiently.

Dr. Allen W. Freeman,

A native of Lynchburg, but now of Baltimore, was in June awarded the honorary degree of Doctor of Science by the University of Richmond, from which he was graduated in 1899. Dr. Freeman retired at the age of 65 as professor of Public Health Administration at Johns Hopkins University and is now consultant in health administration for the Maryland State Department of Health. He makes his home in Baltimore.

Dr. E. L. Henderson

Of Louisville, Ky., president of the American Medical Association, was the guest speaker in Roanoke on May the 24th, at the 29th annual meeting of the staff of Jefferson Hospital. He gave an illustrated talk on the activities of the American Medical Association.

McIntire Tumor Clinic,

At the University of Virginia Hospital in Charlottesville, was made possible by an endowment fund of $100,000 given by Paul Goodloe McIntire, a native of Charlottesville, who now lives in New York. It is a memorial to his second wife, who died of cancer.

The clinic staff is composed of Dr. H. Rowland Pearsall, of the medical staff of the Hospital, who is director; Dr. W. H. Parker, of the surgical department, chairman of the Tumor Clinic Board; Dr. George Cooper, Jr., of the radiology department; Dr. Charles Lupton, of the pathology staff; Dr. Norman Thornton, obstetrics and gynecology; Dr. Byrd Leavell of the medical department, and about 10 members of the University Hospital's resident medical staff. Various medical specialists are also utilized in the diagnosis and treatment of cancer patients.

An average of approximately 45 patients a week visit the clinic, most of whom get their treatment at the University Hospital, and some are referred elsewhere for the convenience of the patient.

The late Dr. W. H. Goodwin, a professor of clinical surgery at the University was the clinic's first director In September, 1936, Dr. Goodwin retired because of illness. He was succeeded by Dr. Edwin P. Lehman, Director of the Department of Surgery of the University, who resigned in 1943 but has continued to serve as a consultant. He was succeeded by Dr. Parker, who served from 1943 to 1949.

What started as one memorial, with the gift from Mr. McIntire, has, through various gifts and bequests, developed into a memorial to many people. And as the years have passed the clinic has grown, and served more and more cancer victims, giving them hope and, in many instances, cure.

The fourteen tumor clinics in Virginia, which are approved by the American College of Surgeons, are located in Charlottesville, Alexandria, Bristol, Newport News, Nassawadox, Danville, Lynchburg, Clifton Forge, Norfolk, Richlands, Richmond, Petersburg, Roanoke, and Winchester.

Dr. Charles L. Outland,

Richmond, has been appointed as a member of the Joint Committee on Health Problems in Education of the American Medical Association and the National Education Association for a term of five years.

Governor of American College of Physicians for Virginia.

At the annual meeting of the American College of Physicians in Boston in April, Dr. Charles M. Caravati of Richmond was elected Governor for the State of Virginia, succeeding Dr. J. Edwin Wood of Charlottesville.

Dr. Horsley President of Virginia Academy of Science.

At the annual meeting of the Academy, held in Roanoke on May 12th, Dr. Guy W. Horsley, Richmond, was elected president. The annual J. Shelton Horsley Research Award, named in honor of his father, a founder and president of the Academy, was presented to Dr. Erling S. Hegre, associate professor of anatomy at the Medical College of Virginia. This award was presented for his developing motion picture photography of serial slicing of em-

bryos which fellow-scientists said will open up new fields of research in embryology. It has taken him five years to perfect the technique.

Mr. Foley F. Smith, Richmond, was re-elected secretary-treasurer, and Dr. E. C. L. Miller, Richmond, was also re-elected secretary-treasurer emeritus.

The Radford Community Hospital

Will hold its annual banquet and scientific program on July 20th at 7:00 P.M., at the Governor Tyler Hotel, Radford. Guest speakers will be Dr. Franklin Carter, Clinical Professor of Surgery of New York University, and Dr. Harold W. Brown, Professor of Clinical Ophthalmology of New York University. This is the sixth annual program sponsored by the staff of the hospital and guests will be doctors throughout the Southwestern Virginia area.

Married.

Dr. Howard Russell Masters of Richmond and Miss Sarah Elizabeth Huneycutt of Appalachia and Richmond, May 13.

Dr. Francis M. Taylor

Has been elected president of the Petersburg (Va.) Lions Club for the new term of office beginning June.

Research Fellowships.

The American College of Physicians announces that a limited number of Fellowships in Medicine will be available from July 1, 1951—June 30, 1952. These are designed to provide an opportunity for research training either in the basic medical sciences or in the application of these sciences to clinical investigation. They are for the benefit of physicians who are in the early stages of their preparation for a teaching and investigative career in Internal Medicine. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for the proper pursuit of his work. The stipend will be from $2,200 to $3,200.

Application forms will be supplied on request to The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pa., and must be submitted in duplicate not later than October 1, 1950. Announcement of awards will be made November 1950.

Dr. Reynold C. Siersema,

Associate professor of surgery at the Medical College of Virginia, Richmond, on June 1 was presented with an award for "distinguished professional service" from the Panzer College of Physical Education and Hygiene of East Orange, New Jersey. Dr. Siersema was graduated by that college in 1922, and later graduated in medicine from the Medical College of Virginia.

Course in Postgraduate Gastroenterology.

The National Gastroenterological Association announces that its course in Postgraduate Gastroenterology will be given at the Hotel Statler in New York City on October 12, 13, 14, 1950.

The course will again be under the personal direction of Dr. Owen H. Wangensteen, Professor of Surgery, University of Minnesota Medical School, with a distinguished faculty for the Course from medical schools in New York City as well as out of town.

For further information and enrollment write to the National Gastroenterological Association, Dept. GSJ, 1819 Broadway, New York 23, N. Y.

Dr. Elbyrne G. Gill

Of Roanoke read a paper by invitation before the First Annual Clinical Meeting of the New York Eye and Ear Infirmary Alumni Association on May the 12th. His subject was "Recent Advances in Extracapsular Cataract Surgery."

Medical College of Virginia News.

Dr. Randolph H. Hoge, professor of gynecology, and Dr. Arthur E. Gathright, Jr., assistant professor of clinical medicine and assistant director of the department of oncology, Medical College of Virginia, will be two of the four speakers to give a series of extramural post-graduate cancer lectures in the state of Oregon this year. The lecture series is sponsored by the Oregon State Medical Society and the Oregon State Board of Health. This will be the second year that Doctor Hoge has been invited by the group to appear on the program of the lecture series.

The MCV faculty members will leave by plane for Oregon. The lecture series will start June 12 and continue through June 23.

Plastic Surgery Award.

The Foundation of the American Society of Plastic and Reconstructive Surgery offers as its 1950 award $500.00 (first prize of $300.00, second prize of $200.00) and a Certificate of Merit, for essays

on some original unpublished subject in plastic surgery. Competition shall be limited to residents in plastic surgery of recognized hospitals and to plastic surgeons who have been in such specific practice for not more than five years. The first prize essay will appear on the program of the forthcoming annual meeting of the American Society of Plastic and Reconstructive Surgery, to be held in Mexico City, November 27-29, 1950. Essays must be in before August 15, 1950.

For full particulars write the Secretary, Dr. Clarence R. Straatsma, 66 East 79th Street, New York, N. Y.

The American Congress of Physical Medicine

Will hold its twenty-eighth annual scientific and clinical session August 28-September 1, inclusive, at the Hotel Statler, Boston, Massachusetts. Scientific and clinical sessions will be given on these days and all sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific session, the annual instruction seminars will be held August 28-31. These seminars will be offered in two groups. One set of ten lectures will consist of basic subjects and attendance will be limited to physicians. One set of ten lectures will be more general in character and will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapy Technicians or the American Occupational Therapy Association. Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

The Potomac Society of Anesthesiologists,

Composed of over 100 physicians of Virginia, West Virginia, the District of Columbia and Maryland, held its last meeting of the season May 31, 1950, in the Medical Society Auditorium in Washington. At the business meeting the following officers for the 1950-1951 season were elected:

President, Dr. Donald H. Stubbs, Alexandria; president-elect, Dr. William E. Bageant, Washington; vice-president, Dr. John J. Mattare, Chevy Chase, Md.; and secretary-treasurer, Dr. Joel B. Hoberman, Arlington. The executive Committee is composed of: Dr. Thomas Walker and Dr. Irving B. Gold, Richmond; Dr. Joseph B. Bogan and Dr. Charles S. Coakley, Washington; Dr. E. Hollister Davis, Baltimore; Dr. Ernest F. Poole, Hagerstown; Dr. John F. Morris, Huntington, W. Va.; and Dr. S. Elizabeth McFetridge, Martinsburg, W. Va.

This society was founded March 19, 1948 with its object the advancement of the Science and Art of Anesthesiology, especially in Virginia, West Virginia, the District of Columbia and Maryland, as well as to stimulate interest and promote progress in the specialty of Anesthesiology.

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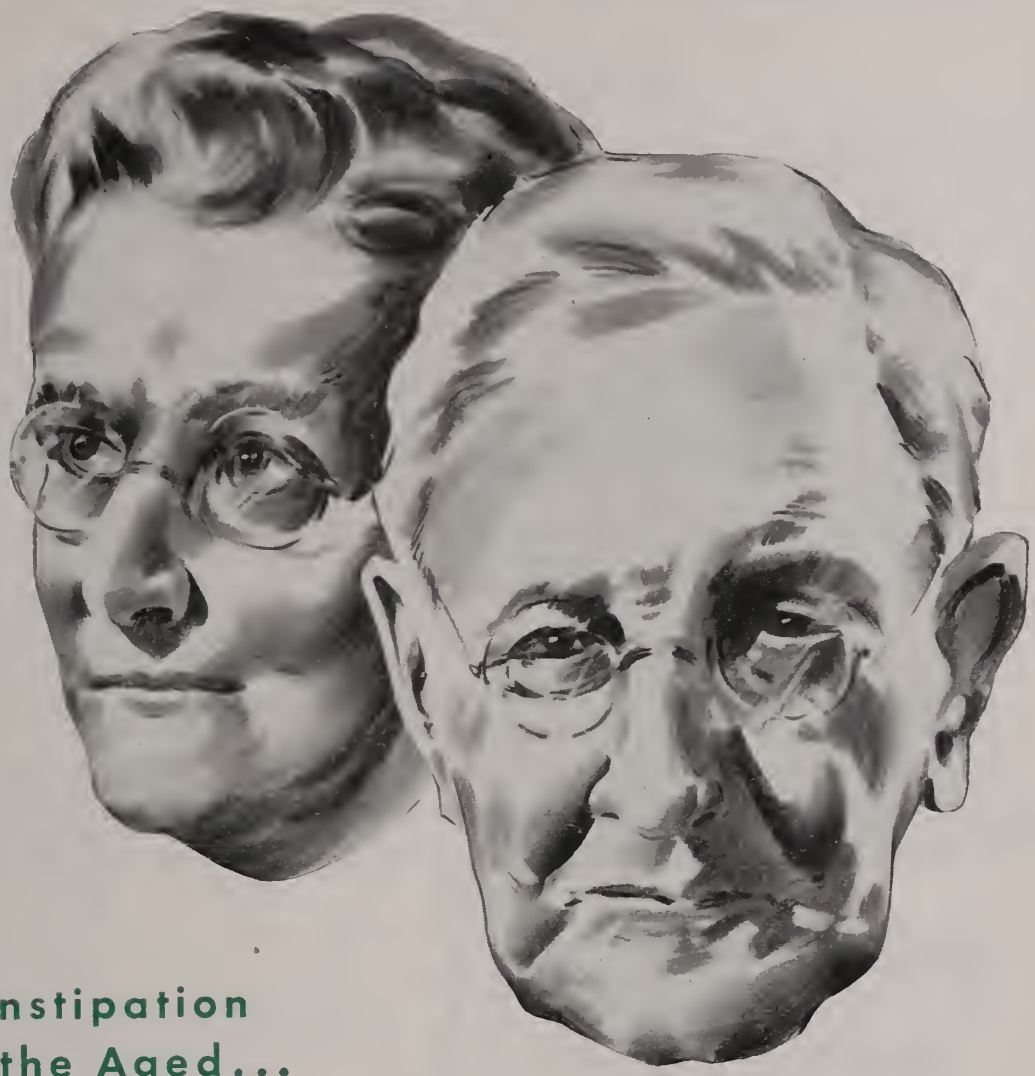
OBITUARIES

Dr. Washington Budd Sager,

For many years a medical practitioner of Danville, died June 10th at the age of 69. He was a native of Shenandoah County and attended the Medical College of Virginia, later graduating from Jefferson Medical College, Philadelphia, in 1908. He moved to Danville in 1917 and had since practiced there. He was a member of his local and the State medical societies and of the American Medical Association. His wife and several children survive him.



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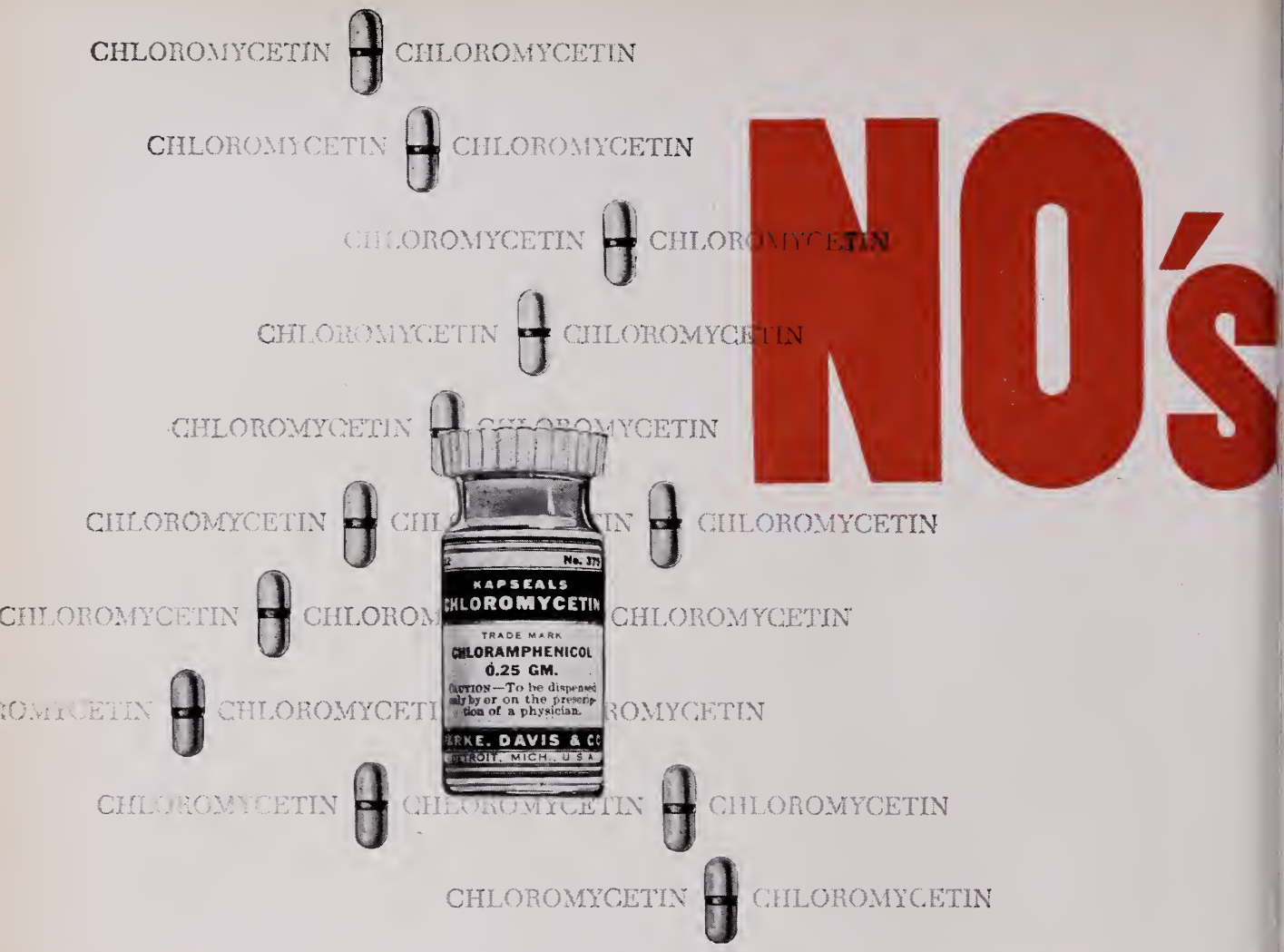
August, 1950



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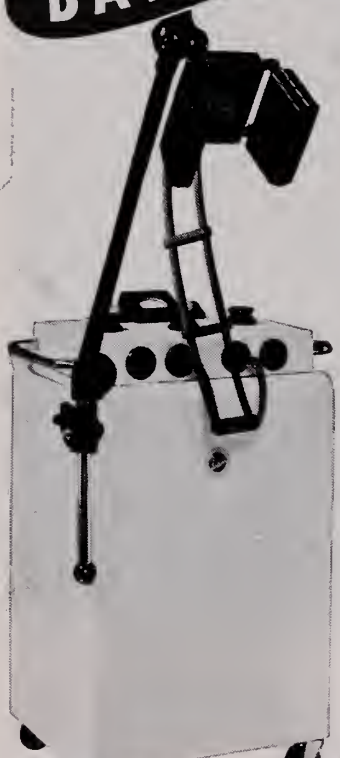

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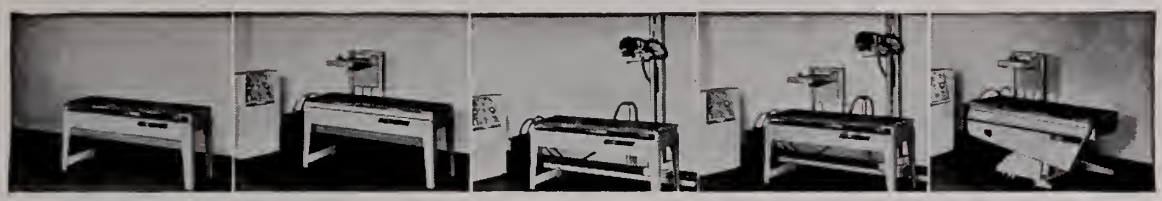

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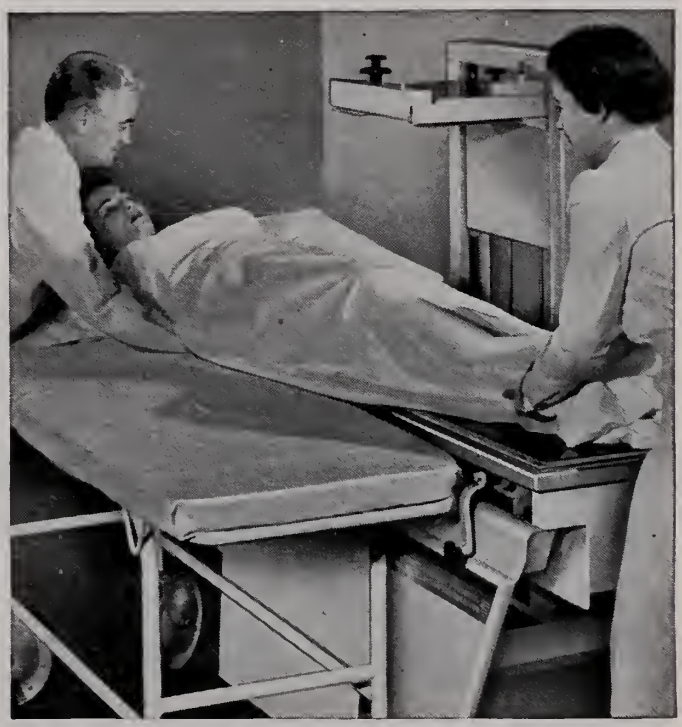

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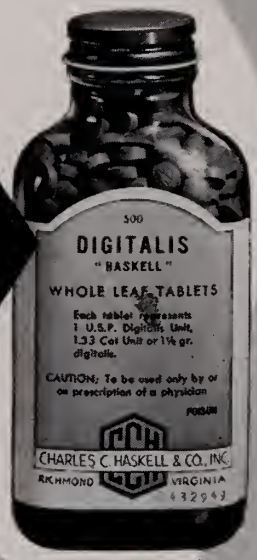

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Virginia Medical Monthly

Vol. 77, No. 8
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RICHMOND, VA., AUGUST, 1950

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GUEST EDITORIAL

Health Legislation

1950

IN these fast-moving, modern times, it is almost an axiom that no state can continue to prosper in health or wealth without benefit of a well-balanced, progressive public health program.

Such a program is brought into being by the demands of the citizens as expressed through their elective representatives. Without laws, for example, a modern sanitation program would fall before the positive forces of avarice and the negative rot of laxity and indifference. Without appropriations, operating costs of life-preserving services could not be met.

The Virginia General Assembly in 1950 studied the various phases of the public health program and found some worthy of expanded service and others in need of greater legal support. As a result of legislation by this body, industrial health, venereal disease control, cancer control and other programs were further improved and increased in effectiveness and value.

Bills sponsored by the State Health Department were few in number, but all were enacted into law, and each undoubtedly will have an important part in the improved health picture of the Commonwealth.

The following health laws will become effective July 1, 1950. Although not all were sponsored by the State Health Department, each of them is part of the general public health program and receives the hearty support of state health workers.

CANCER REPORTING LEGALIZED. The General Assembly made it legal for hospitals to give statistical information to the State Health Department for use in cancer research. According to the law, each hospital and clinic within the state may make available to the cancer bureau abstracts of their records on patients having malignant tumors and cancers.

Actually the Health Department has been briefing records for some time in many hospitals. The legality of the procedure has been questioned, however, and certain hospitals have been reluctant to part with the desired data.

This information is recorded in a central registry. Included are final facts concerning the prevalence of cancer in the state, the geographic distribution of cases; the anatomical location of cancers; the division of victims by age, sex, and color; survival periods; and life expectancy. The information is confidential and published only in the form of statistics without identification of individual cases.

INDUSTRIAL HEALTH BILL. The State Health Department was authorized by law to survey health hazards in industrial plants.

In the past, personnel of the Bureau of Industrial Hygiene have worked in this connection only when requested. Many industries have welcomed the service, but a small fraction of the plant operators have been hostile, refusing entrance to engineers to survey their plants. The new law will do much to alleviate this unfortunate situation.

Each year thousands of dollars are paid out by industries as compensation to workers with occupational disease claims which come within the provisions of the Virginia Workmen's Compensation Act. No legal steps have been taken previously to prevent these cases before they occurred. Under provisions of the new law it will be possible to apprize operators of hazards within their plants, possibly preventing many of these diseases and accidents for which claims are made.

The Bureau of Industrial Hygiene is staffed with experienced personnel and has specialized equipment that would be uneconomical for small private industries to own. Whether the operators of the plants surveyed will heed the recommendations of these engineers and take steps to protect workers, remains to be seen. It is believed, however, that this legislation will go a long ways toward preventing occupational diseases.

PRENATAL SEROLOGICAL EXAMINATION. This law requires that a blood test be made of each pregnant woman to determine whether or not she has syphilis.

Syphilis is the cause of death in 80% of the children born of infected mothers. To live without treatment is a worse tragedy than early death for these children. If syphilis is detected, however, treatment is rapid and beneficial as late as the fifth month of pregnancy.

All positive syphilis tests must be filed with the Bureau of Venereal Disease Control. There the information will be kept confidential and not published except in statistical form without identification of person.

DENTAL HYGIENISTS LICENSED. Legislation was enacted, defining dental hygienists and licensing their practice. A dental hygienist is a person trained in the practice of cleaning and polishing teeth. According to the Act, their function is to assist members of the dental profession in providing oral health care to the public.

The hygienist is to work under the direction of a registered dentist of this state. She may remove calcareous deposits and stains, polish, and make topical applications of medicinal agents to the teeth for prophylactic purposes.

Dental hygienists will be used in the dental program of the Health Department.

CONFIDENTIAL NATURE OF VITAL RECORDS ENDORSED. A law was passed providing that a full birth certificate shall be issued only upon the discretion of the State Registrar, except when sought by the person registered if he is of age, by his legal representative, or by court order. This will protect confidential information about births,

Death records are also protected, the bill providing that certified copies of a death record may be issued only to a legal representative of the deceased or to a person having a direct interest in the matter recorded, or by court order. Records that are confidential encourage more accurate and complete registration and help eliminate needless embarrassment to illegitimate children or their parents.

The importance and need to the individual as well as to Public Health programs of Vital Records is continually increasing. This new law is believed to be a step toward safeguarding and protecting these records in the interest of both.

Medical Scholarships Provided. The General Assembly authorized the University of Virginia and the Medical College of Virginia to establish annually 20 medical scholarships each and Virginia State College to establish 10 annual scholarships to Virginia students attending Meharry Medical College, Nashville, Tennessee.

Before any scholarship is awarded, the applicant must sign a written contract that includes, among other things, a stipulation that he engage in the general practice of medicine in a rural community in Virginia. Selection of the community will be his own, but his selection will be from one approved by the State Health Commissioner. Under the terms of the contract the applicant must agree to practice for a period of years equal in number to the years that he was beneficiary of his scholarship.

Six annual nursing scholarships for each congressional district were established by the Legislature. Twenty nursing scholarships for Negroes were established to be awarded from the state at large. These scholarships will be made by the State Board of Health.

Many rural Virginia counties desperately need more active doctors and nurses. The financial aid provided by these scholarships may encourage more students to engage in rural practice, thereby relieving the general scarcity of medical people in those areas.

L. J. Roper, M.D.,
State Health Commissioner of Virginia.

Floral Eponym

Caralluma Dalzielli

Dalziel, John McEwen, 1872-1948

DALZIEL was born at Nagpur, India on May 16, 1872 and died at Chiswick (London), February 21, 1948. He was educated at Dollar Academy, Scotland, and at Edinburgh University, where he studied medicine and took the degree of M.B. (later qualifying as M.D.). Upon leaving the University he spent some six years in South China as a Presbyterian medical missionary. In 1902 he joined the West African Medical Service and served in Northern Nigeria and later at Accra on the Gold Coast. Upon his retirement, in 1923, he worked at Kew Herbarium, collaborating with Dr. J. Hutchison in writing "Flora of West Tropical Africa". He added an appendix to this work, "Useful Plants of West Tropical Africa" (1937), recording the medical usage of these plants. This is now an authoritative work. Previously, (1916) he wrote "A Hausa Botanical Vocabulary". He also collected insects of importance as vectors in tropical medicine and presented his collection to the University of Edinburgh.

Caralluma dalzielli is a species of the milk weed family.

MANAGEMENT OF DELIRIUM IN THE GENERAL HOSPITAL*

PATRICK H. DREWRY, JR., M.D.,†
and
JAMES B. FUNKHOUSER, M.D.,†
Richmond, Virginia.

The word "delirium" originally was used to denote any type of mental illness, but in the course of time has come to have a more circumscribed meaning. It is now regarded as a disorder of the sensorium in which orientation is impaired, the critical faculties are blunted or lost, and thought content is irrelevant and incoherent. Commonly there are illusions or hallucinations, and frequently there is a marked fear reaction. The degree of delirium may vary from a mild state of mental confusion which is brief in duration to an acute and severe reaction in which the patient is almost uncontrollable. It occurs typically as a result of either endogenous or exogenous toxic processes. The endogenous processes are exemplified by infection, metabolic disturbances, anoxia or the retention of waste products. The exogenous toxic processes are brought about by the introduction of some drug such as the barbiturates or alcohol. Frequently there is a combination of both endogenous and exogenous factors, and thus we find that due to disturbed metabolism some otherwise safe and harmless sedative adds to the delirium, due to faulty or incomplete elimination by a diseased or damaged excretory function.

Although there has apparently been some decrease statistically in the incidence of fatal delirium within the past decade, the reaction is still a relatively frequent one and is a problem which as a rule must be handled in a general medical or surgical hospital. A delirious patient in such a hospital usually presents an acute problem and is often an administrative, if not a medical, emergency. It is felt that the situation is frequently misunderstood and managed in an unsatisfactory way, thus leading to embarrassment for the doctor, anxiety for the nurses, and danger for the patient. It is also believed that most mistakes are due to failure to recognize the condition in its early stages with a resulting delay in the institution of proper therapeutic and preventive measures. It is the purpose of this paper to discuss the early signs of delirium and to suggest a method of management. It is to be understood, of course, that the first procedure is to treat the disease which is producing the delirium, but in this paper, discussion will be limited to the management of that symptom-complex alone.

Delirium is a disease of the night, and it is believed that this is the chief reason for failure to recognize its existence early, for examination of the records of delirious patients shows in many cases that the patients had been mildly delirious for several days prior to the time the physician became aware of it. *During the daylight hours, particularly the morning hours, the patient may be mentally clear.* At the end of the day the physical factor of exhaustion and the psychological factors of light and shadow combine to make the evening and night critical times. A mildly delirious patient or one who is in a pre-delirious stage may exhibit only slight restlessness, apprehension, inattention, and a tendency to give irrelevant or incoherent replies to questions. The only significant complaints of the patient may be of insomnia or bad dreams, and such symptomatology is easily overlooked when morning rounds are made because the patients are apt to minimize, rationalize or deny that such symptoms have been present during the night. Not infrequently a patient who has had hallucinations during the night will state in the morning, if asked, that he remembers having had a few bad dreams during the night, but that otherwise he rested comfortably. The night nurse is not present to give her account of the patient's talk and behavior during the night, and in her report she may merely have described his behavior as "restless". Even if she has written a detailed statement of his mental symptoms, the physician may not have read the note.

Another reason for failing to recognize the existence of delirium in its early stages is that the physician is preoccupied with the medical or surgical condition in which he is primarily interested. For example, the physician who is treating a patient with cardiac decompensation is primarily interested in restoring compensation and perhaps does not even think of the possibility of delirium. Yet, in a series

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*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

of cases studied by one of us in a general hospital it was found that 8% of patients admitted for cardiac disease had some degree of delirium at one time or another during their hospitalization. The following case illustrates the development of delirium and some of the factors which led to the failure of the physician to realize its existence in its early stages:

The patient was a 45 year old man who had used alcohol regularly for 20 years, but not to the extent of interfering with his work. He was admitted to the hospital because of a broken leg. On the first night after admission the nurse's notes showed that at 1:00 A.M. she had found him standing by the window in his cast, and had difficulty in persuading him to get back in bed. When questioned about it in the morning, the patient said he was accustomed to having plenty of air at night and that he had left his bed to try to open the window. Sodium amytal was ordered the next night to insure sound sleep. The nurse's notes for that night indicated that he was up all night, said he was expecting visitors, was not aware of what time it was, was noisy and generally uncooperative. On morning rounds, however, the patient was found to be oriented and cheerful, almost to the point of gaiety, although slightly excited and with a moderate elevation of temperature. There was no evidence of any mental derangement, and the physician disregarded the nurse's note. The patient slept quietly all afternoon, but on the third night the supervisor called the physician to report that he had left the hospital in his bed clothes and four men were required to drag him back to his bed. He was in a state of panic, and was screaming that the F.B.I. was after him.

This case illustrates the fact that delirium usually has an insidious onset and that one can fail to recognize its existence due to the fact that it is at night that the first symptoms usually begin and the symptoms may show a diurnal variation.

In the management of the delirious patient there are psychological as well as physical factors to be considered. Nurses are trained to keep the sick room as quiet as possible, particularly at night. Lights are shaded, corridor conversations are held in whispers, and footsteps are on tiptoe. As darkness closes in, half-open doors, bed screens and the blowing of window curtains cast unfamiliar shadows. Unidentified, partially muffled sounds come from adjoining rooms. Furthermore, since the nurse is required to determine whether patients are sleeping well, she may tiptoe around with a shaded flashlight, peering into the patients' faces to see whether they are asleep. In a setting such as this it is easy for the partially clouded brain of an acutely ill patient to misinterpret what he sees and to develop illusions and hallucinations.

It is a well established fact that a delirious patient, especially in the early stages of delirium, can often be successfully diverted if his attention is engaged by conversation, banter, questioning, examination, etc., much as a child who wakes frightened in the night has to have his fears removed. Delirious patients are extremely suggestible, but the very suggestibility which can turn a shadow into a snake and a window curtain into a ghost may be used with good therapeutic results. The psychological aspect of the management of delirious patients should be in accord with an understanding of the facts mentioned above. The patient who is showing any evidence of developing delirium should be in a room where the lights can be turned on without disturbing others. Ideally, he should have a night nurse who can be present to reassure him at any time that he appears frightened or anxious. Patient, continuous, persuasive conversation, diversion, a well-lighted room and a matter-of-fact tone of voice may literally "bring the patient to his senses". Furthermore, of definite importance in the nursing management of such patients should be the concentration of all personnel concerned, around the clock, to readjust the patient's waking and sleeping hours so that the vicious circle of turning the night into day is broken. A rigid insistence that the patient stay awake during daytime hours often makes sleep more possible at night. Patients who are permitted to lie awake all night and sleep all day will take a more protracted course in recovering from delirium.

Prophylaxis is another factor in the management of delirious patients. The knowledge of the type of patient who is likely to develop delirium has often prevented cases from developing. Patients with acute infectious diseases, particularly where the illness is of long duration, such as typhoid fever or those in which there is an unusually high temperature, as lobar pneumonia, constitute one group. Other groups are post-operative patients, especially those who have lost an unusually large quantity of blood, physically exhausted patients such as those who have not slept for long periods of time or have become dehydrated,

and, finally, uremic or cardiovascular patients whose brains are likely to suffer from anoxia are also prone to develop a toxic psychosis. In such cases, with endogenous factors already at work, an addition of exogenous toxins, such as alcohol or drugs, may be hazardous. The actual function of the liver as a detoxifying agent is still unfortunately obscure, but it is known that this is one of its most important functions. It is puzzling as to the exact part the various vitamins play in the toxic psychoses, but it is certain that avitaminosis is clinically very important in the production of delirium. Glucose and certain of the vitamin B group are indispensable in both the brain and the liver. The incidence of delirium is very striking in patients with damaged liver function and in our series of cases we have come to suspect that a diseased liver is present in the majority.

It follows then that in the prophylactic treatment for delirium, combating the tendency to dehydration, avitaminosis and starvation are of great importance. When the patient has been taking barbiturate sedatives these drugs should be withdrawn immediately, since barbiturates are destroyed in the liver, and if the liver function is damaged an excessive quantity of drug will accumulate in the body. Sometimes the mere withdrawal of such sedative medication is all that is necessary. However, when violence must be controlled and sleep is imperative, paraldehyde should be given since it is excreted by the lungs in large part rather than the liver. The quantity of sedative medication which is given should be that which is sufficient to produce the desired results. We find that many patients are kept in a state of excitement by quantities of sedation which are sufficient to release inhibitions but not sufficient to produce sleep. The individual who has developed, or might develop, delirium should be given an adequate quantity of sedation to induce sleep, if sedation is necessary. Paraldehyde is a safe sedative, and most adults can tolerate a dose of 4 drams or more without any adverse effect. The authors believe that a great many cases of delirium are actually drug intoxications.

In any case of delirium, since there may be liver damage or inadequate excretion of toxic products, it is felt that glucose, thiamine and vitamin B complex and as much fluid and nourishment as can be retained should also be given.

It is a recognized fact that a routine schedule of treatment for any type of illness is not satisfactory, since individuals vary in their reactions. However, it is felt that it may be of value to suggest a schedule for an average patient who is developing, or has developed, a delirious reaction. Let us consider the patient to be an adult male, whose weight is about 150 pounds. He has been admitted to a general hospital with a serious medical or surgical illness, and has begun to show the early signs of delirium mentioned previously. The suggested management of his case is as follows:

(1) The illness responsible for admission should be properly treated.

(2) The patient should be placed in a single room, preferably one which has a special type of screen which will prevent him from getting out of the window. If this type of screening is not available, he should at least be on the ground floor.

(3) The lighting of the room should be such that no puzzling or disturbing shadows are cast at night. If his condition permits, he should be kept awake during the daytime. In many cases, 5-10 mgm. of benzedrine at about 9:00 A.M. will serve the double purpose of keeping the patient awake during the early part of the day, and of producing a temporary sense of well-being.

(4) There should be a special attendant, especially at night, preferably one who is trained in the management of such cases, but, if not, an individual of reasonably good intelligence who can talk with the patient and relieve him of his fears.

(5) It is essential that the patient receive an adequate amount of food, high in carbohydrates and proteins, unless there is some definite contraindication to this. The nurse may be required to spoonfeed the patient.

(6) Liquids must be given in quantity, preferably by mouth, but intravenously if necessary.

(7) Vitamins of the "B" group are essential, and the patient should receive 150 mgm. of thiamine chloride, t.i.d., by mouth, if possible. Most patients are able to take this, and it should be supplemented by 1,000 c.c. of 5% glucose in saline with one or more ampules of vitamin B complex (such as "Solu-B") daily if necessary.

(8) Where the patient is too restless or agitated to permit the administration of such a quantity of fluid intravenously, 50 c.c. of 50% glucose, with insulin, u 20, and the vitamin B complex added, may be used.

(9) Finally, where it is essential that sedation be

given, it is suggested that paraldehyde, Z IV, be given. This may be repeated in two hours, if necessary.

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Discussion

Dr. Sidney G. Page, Jr., Richmond: The points mentioned in this paper stress ideas in the care of patients with acute delirium which are seldom noted in text-books. Such matters as having patients sleep at night and kept awake during the day, avoiding unnecessary use of sedatives, particularly in those patients with sick livers or in those patients with very high temperatures in whom delirium is impending, as well as reassurance of frightened patients who need support of this type, are all particularly helpful points. Doctor Funkhouser has touched on the important role of impaired liver function in the causation of delirium, and suggests more liberal use of paraldehyde in place of barbiturates. It has been stated before that if a pleasant tasting and smelling paraldehyde could be devised, this very satisfactory drug would largely replace barbiturates in conditions such as acute delirium.

Prophylactic treatment for delirium such as combating dehydration, avitaminosis and starvation cannot be overemphasized and the speaker has indicated a very helpful outline for the prevention of delirium, as well as the treatment of such condition. If these points are kept in mind and used, there will be less acute delirium seen in the general hospitals.

Dr. James Otey Burke, Richmond: Doctors Drewry and Funkhouser have brought to our attention an important feature of many illnesses. As general practitioners, internists and surgeons, we have frequently considered delirium only as a necessary complication of some serious illnesses.

As they have implied, the cardiac patient may have delirium as a result of anoxia. Fever alone may be the factor in some febrile diseases. I would like to comment chiefly on the role of the liver in the production of delirium.

The mechanisms of relationship between hepatic function and brain function are not clear. Mahaim has produced diffuse ganglion cell disease in the brain by experimental liver damage.

Basal ganglion degeneration in dogs has followed common bile duct ligation.

Degenerative glial changes have been noted in acute yellow atrophy and cirrhosis.

The most striking clinical indication of relationship occurs in the hepato-lenticular degeneration of Wilson's disease. We recognize hepatic coma, but we cannot always demonstrate, in bio-chemical terms, the difference between a case of severe hepatitis without nervous system symptoms and one with nervous system symptoms. In some, hypoglycemia accounts for the difference. Thiamin and niacine help some, but not all. No difference may be noted in the fetor hepatitis of the two patients. We are sure that there is a difference between these two patients but cannot always prove it by our ordinary laboratory means.

A possible relationship between the liver and brain cell activity is suggested by a glutamic acid linkage as follows:

Nerve cell potential is intrinsically based on acetylcholine release. Nachmansohn has shown that glutamic acid may act as a coenzyme of choline acetylase in that it increases the formation of acetylcholine.

Zimmerman and others have shown glutamic acid is beneficial to intelligence tests in the white rat, and later that glutamic acid may have a facilitating effect on mental functioning in human subjects.

Glutamic acid was also shown by Weil-Malherbe to be the only amino-acid oxidized by brain slices.

Glutamic acid being an amino acid is also essential to liver function and the blood level of all amino acids is likewise affected by liver function.

Other liver-brain relationships may be more or less direct. Of all the vitamins, nicotinic acid appears to have the greatest effect on relieving toxic psychoses, not only in pellagrins, but in other malnourished patients not typically pellagrins. Nicotinic acid is essential, apparently, to normal methylation in the hepatic cells and repeated episodes of pellagra have been associated with the development of cirrhosis, other dietary factors obviously taking part.

The fact that severer cases of toxic psychosis may not respond as quickly to nicotinic acid has been cited as an argument that the needs of the liver must be met before those of the brain.

In any event, it is not clear whether the effect of nicotinic acid on the brain is direct or indirect, through liver metabolism.

Foster has shown that the detoxifying ability of the liver as measured by the benzoic acid-hippuric acid excretion test is diminished in severe toxic psychosis of long standing. He also demonstrated that the mental picture returned to normal only after improvement in this test of liver function. From his observations, Foster believes that "nutritional psychosis" is a better term than "toxic psychosis".

The nutritional state of hyperthyroidism, with its associated psychosis and liver function impairment, likewise bespeaks of a common denominator in the liver-brain relationship.

It has been suggested by Foster that the liver's role in brain function may be the synthesis of an intrinsic factor.

From a practical standpoint, I would urge, as have many writers, that patients with toxic psychoses be given

500 mgm. of niacine daily, and I would suggest that any patient with toxic psychosis be considered to have impaired liver function until shown otherwise.

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Early Treatment for Children who Stutter.

Every preschool child who shows early signs of stuttering should receive immediate treatment, points out Dr. Isaac W. Karlin of the Speech Clinic of the Jewish Hospital of Brooklyn. (J.A.M.A., June 24.)

According to the author stuttering occurs in about 1 to 2 per cent of the population. The condition always begins in early childhood and is approximately four times as common among boys as among girls.

"A child of about three or four may begin to repeat words or sounds. He may show only an occasional slight hesitation in his speech and while speaking may stop suddenly as if groping for a word.

"There are no drugs today for the treatment of stuttering. The treatment is through the parents. The child's attention should not be drawn to his speech difficulty. In his presence the parents should talk in a simple, easy manner. They should not try to increase or improve his vocabulary. They should notice the situations or circumstances during which he talks best, and these conditions should be encouraged. Conditions under which he stutters more should be discouraged.

"Self-reliance should be encouraged, especially in eating and playing. A period of relaxation should be provided every day during which the mother reads to the child in a calm and easy manner.

"A question frequently is posed about the relationship between handedness and stuttering. There would appear to be no reason to believe that there is any. However, every child with a speech disorder should be encouraged to develop his dominant hand, be it left or right."

Mental Deficiency More Likely in Children Born to Mothers over 40.

Any woman who bears a child after the age of 40 runs a statistical chance of about 1 to 6 per cent of having a child with mongolism, a congenital mental deficiency.

This is brought out in a report by Dr. J. A. Book and S. C. Reed, Ph.D., of the University of Minnesota, Minneapolis, in the June 24, J.A.M.A.

Children with this severe condition commonly are called idiots. Mongoloid babies are recognized by their marked liveliness, flattened skull and oblique eyes.

The frequency of mongolism in the general population is estimated to be between 1 out of 500 and 1 out of 1,500, according to the report.

Risk of having a mongoloid child also increases after a mother has borne one baby with the deficiency.

"A woman who has borne a mongoloid child runs a statistical chance of about 4 per cent of having the next pregnancy result in the birth of another mongoloid child.

"This implies a 40 times greater risk than the average at all ages."

TREATMENT OF LOWER NEPHRON NEPHROSIS BY INTESTINAL LAVAGE*

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A. J. Crutchfield, M.D.,
and
J. Edwin Wood, M.D.,
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Lower nephron nephrosis as a cause of acute renal insufficiency is assuming increasing prominence as a medical problem. The common pathogenic factor seems to be a massive shock to the kidney. This may originate from a transfusion reaction, sulfonamide reaction, surgical shock post-operatively, post-abortion, after a crushing injury, in black water fever and a vast number of poisonings and other insults. The exact mode of mediation of this shock is not established, but Trueta[19,21] has demonstrated a shunt of the blood flow in the kidney. In this, the blood is deviated from the usual cortical path and instead is short circuited through the vasa recta and subcortical plexus. Others hold that the blood is pooled in the peripheral vessels[20] but the end result is agreed to be the same that is renal cortical anoxia. There is damage to the distal tubular segment of the nephron with subsequent necrosis and plugging of these tubules and resultant anuria[1].

The symptoms associated with this condition are, first, the symptoms of the pathogenic factor, and, second, anuria with its associated symptoms. It has been shown that in a majority of individuals with this lesion, regeneration of the tubular epithelium and spontaneous diuresis will ensue if the patient lives for ten to fourteen days. To insure the patient's chance for survival, certain measures are necessary. First, one must remove or correct the causative factor. Since no fluid is eliminated from the body save that by insensible loss or by defecation, the fluid intake of the patient must be sharply limited. The insensible loss of fluid is about 1,000 cc. per day. The preformed water and water of oxidation totalling 450 cc. daily is released, leaving a deficit of 550 cc. of fluid if the patient is completely anuric. One must replace this if concentration of electrolytes and cellular dehydration is to be avoided. Intake of protein and fat should be kept to a minimum to avoid rapid piling up of ketone bodies, urea and potassium. It has been shown[2] that by with-holding all nutriment from these patients except for 500 to 1,000 cc. of water containing 100 gms. of CHO, ketosis can be kept to a minimum and protein metabolism can be cut in half. By so doing urea formation and potassium liberation can be appreciably diminished. So favorably influencing the patient's metabolic processes makes his chances for remaining alive long enough to undergo diuresis appreciably greater. But one must repeat that restriction of fluid *per se,* thus preventing fatal edema and drowning of the patient is the prime consideration in his management.

In spite of this logical management, many of the patients will develop a metabolic situation with which we are primarily concerned in this presentation. Subjects with anuria who are not drowned by overzealous administration of fluid are still subject to elevation of the serum potassium and urea, as well as other metabolic products. It is known that many who die before diuresis die of cardiac standstill due to elevation of the serum potassium to a fatal level. The detection of potassium poisoning in an early stage is only possible by following the serum potassium and electrocardiographic changes at regular intervals.

In cases with potassium poisoning, some means of clearance of metabolic products must be instituted. Many methods for extra renal clearance of products of metabolism have been devised[3]. The general principle in all is similar, that is, migration of the metabolic products across a membrane into a lavaging fluid. We chose lavage of the stomach and upper small intestine because in our hands it is a simple and effective method[4,5]. (Fig. 1).

Materials and Methods: A Miller-Abbott tube is passed via the nose through the pylorus of the stomach two to five feet beyond into the small intestine.

From University of Virginia, School of Medicine, Department of Medicine.

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

A Levine tube is simply inserted into the stomach, so the desired lavage fluid can be introduced through the Levine tube into the stomach. It passes down the intestine during which course substances with high concentration in the blood pass into the fluid. Constant suction is maintained on the Miller-Abbot tube and when the lavage fluid reaches the tip of this tube it is sucked back, evacuated from the bowel and thus eliminated with the waste products before absorption of appreciable fluids or electrolytes occurs.

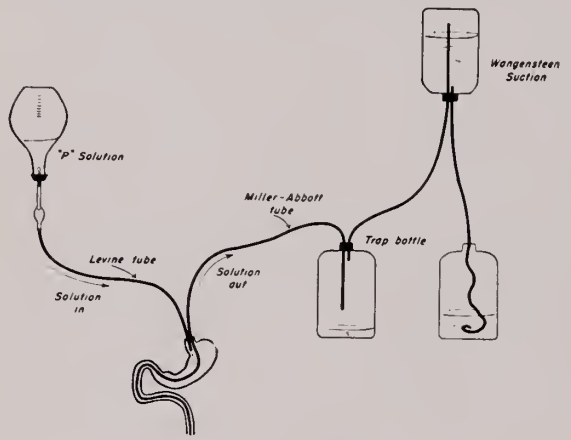

Fig. 1. Mechanism of intestinal lavage.

The solution used for lavage of the mucosa in this study was a modification of that already suggested[11]. It contained sodium chloride, sodium bicarbonate, calcium chloride and magnesium chloride in concentrations similar to plasma and glucose in concentration sufficient to supply the caloric requirement of the body as well as possible. (Table I).

	GRAMS/LITER
NaC1	6
$NaHCO_3$	3
$MgC1_2$	0.1
$CaC1_2$	0.1
Glucose	20

TABLE I. "P" SOLUTION

This solution was introduced through the Levine tube at a rate as near 10 liters/24 hours as possible. The solution was analyzed before and after passage through the tubing and bowel with determinations of urea, sodium, potassium, chloride, and volume. On occasions samples were obtained at five to six hour intervals and analyzed. The serum sodium was determined gravimetrically[14], and the urea, CO_2 combining power, and chlorides (plasma) by the conventional methods[15,16,17]. The serum potassium and the sodium and potassium in other fluids were measured by means of the Perkin-Elmer flame photometer.

One subject with acute renal insufficiency was treated for four days by intestinal lavage, and his case is reported below. Lavage was instituted in two subjects, one with chronic glomerulonephritis in its terminal phase, and one with malignant hypertension. This was done to prove the efficacy of the method.

RESULTS: CASE REPORT—LOWER NEPHRON NEPHROSIS

A 43 year old colored male was well until a frontal headache, persistent for 18 hours, necessitated his being seen in the clinic. While there, urine specimen was normal. He then had several generalized convulsions necessitating hospital admission.

On admission he appeared well nourished and of average size with normal blood pressure, pulse, respiration, and temperature. He was responsive only to painful stimuli and all reflexes were absent. The remainder of the physical examination was normal. The next day his temperature reached 104°F. and nuchal rigidity ensued. Sulfadiazine and penicillin therapy was instituted and about that time it was noticed that the urine volume was limited. The sulfadiazine was discontinued and streptomycin substituted. An indwelling catheter was inserted and urine volume remained below 50 cc. per day for five days. Fluid was limited to 750 cc. of 20 per cent glucose intravenously per day plus a volume equal to the previous day's urinary output. He developed a small amount of edema, but urine flow increased to 300 cc. per day on the sixth day. This urine was of 1.010 specific gravity and contained 36 mgm. per 100 cc. of urea and 1.5 grams of sodium chloride in the day's urinary output. Urine volume and constitution remained about this level for the next ten days. The blood urea had climbed steadily to a level of 292 mgm. per cent at this time and the CO_2 combining power had decreased to 10 m.Eq./liter in spite of administration of a portion of the prescribed day's fluid in the form of one-sixth molar sodium lactate on several occasions. The patient was stuporous and there was a "urea frost" on his brow. Heart rate was 50 and electrocardiogram showed changes characteristic of moderately severe hyperpotassemia[18]. (Fig. 2). There was auricular standstill with idioventricular rhythm. The QRS was 0.12 of a sec-

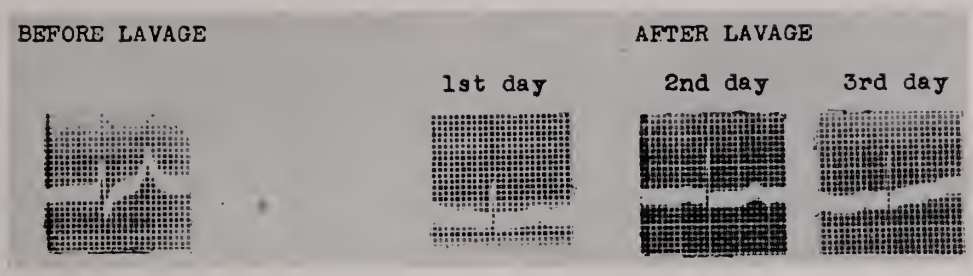

Fig 2. Electrocardiagram in patient with lower nephron nephrosis before and during lavage.

ond in duration and the T waves were tall and spiked. Tubes were passed for intestinal lavage, the Miller-Abbott tube being fed five feet beyond the pylorus. The first two days a solution of 0.9 per cent saline and five per cent glucose was used; then the modified "P" solution was utilized for lavage. Five to eight liters of fluid per day were passed through the system. After 24 hours of lavage an electrocardiogram showed the heart rate and rhythm to be normal with a QRS duration of 0.06 of a second and normal T waves. Later the CO_2 combining power and chloride became normal. The blood urea fell to 212 mgm. per cent. Because the serum potassium had fallen from 7.2 to 4.8 m.Eq./liter, lavage was discontinued on the fourth day of lavage and the nineteenth day of illness. No significant increase in edema occurred during the period of intestinal lavage. Blood chemistry values varied only slightly following this until the twenty-second day of illness when diuresis ensued. Even then the urine remained dilute, but the blood urea fell slowly and steadily. He became afebrile and asymptomatic, and was discharged on the thrity-fourth hospital day. (Table II).

	Before Lavage	During Lavage			
		1st day	2nd day	3rd day	4th day
Urea (mgm/%)	292	270	275	220	212
K (m.Eq./l)	7.2	---	---	---	5.2
Na. (m.Eq./l)	134	---	---	---	144
CO_2 (m.Eq./l)	10	12	12	22	21
Lavage Fluid	0.9% NaCl + Glucose			"P" Solution	

Table II. Blood chemistry changes during intestinal lavage in patient with lower nephron nephrosis.

This patient was slightly edematous and the small amount of sodium lactate he could tolerate did not alter his CO_2 combining power. After one day of lavage with "P" solution the CO_2 combining power increased from 10 m.Eq./liter to 22 m.Eq./liter. Potassium was removed in the fluid in a concentration about two-thirds to three-fourths that of the patient's serum level. The urea concentration of withdrawn solution was equal to blood urea concentration (292 mgm. per cent).

After two months, random urine concentration was 1.020 and P.S.P. excretion was 30 per cent in 15 minutes, 70 per cent in one hour, and the blood urea was 20 mgm. per cent. Blood pressure remained normal during the entire hospital stay and after discharge.

In the patients with hypertension and nephritis, the concentrations of urea and potassium in the lavage fluid were greater than one-half that of the concentrations in the blood serum. (Table III).

Discussion

The institution of upper intestinal lavage was not difficult. In all cases the method was in operation within three hours after attempts were begun. Two complications must be avoided. Pneumonitis is likely to develop but the use of prophylactic penicillin readily avoids this process. In all cases some fluid absorption is encountered. This must be kept to a minimum by careful supervision. Obviously the volume of fluid absorbed in a day must be subtracted from the day's proposed fluid intake. In the

			Solution Before Lavage		Solution After Lavage	
Patient	Bl. Urea (mgm/%)	Serum K (m.Eq./l)	Urea (mgm/%)	K (m.Eq./l)	Urea (mgm/%)	K (m.Eq./l)
1	292	7.3	0	0	292	3.9
2	274	5.4	0	0	156	3.9
3	120	3.0	0	0	60	3.0

Table III. Composition of perfusion fluid before and after lavage.

subject with lower nephron nephrosis, 28 liters of fluid were used in lavage in the four days. Of this, 26.5 liters were recovered from the Miller-Abbott tube. Lavage of the stomach and upper intestine was preferred over other methods of clearance of metabolic products. It avoids the surgery, asepsis, mechanical difficulties and fluid absorption attendant on peritoneal lavage[6,7,8]. The artificial kidney is cumbersome and demands heparinization which is time consuming and difficult[9,10]. Colonic lavage results in decided fluid and electrolyte absorption[11].

As to its efficiency, as much as 18 grams of urea was removed in twenty-four hours of intestinal lavage. It has been shown that under basal conditions, removal of one to three grams of urea every twenty-four hours will afford a balance[4]. The role of urea, however, has been greatly over-rated[4,7,8]. It is true that the degree of urea retention is an indication of the degree of retention of other products of metabolism. However, oral administration of urea is associated with no significant toxicity[12,13].

We consider more important than this the fact that the subject with acute renal shutdown had hyperpotassemia that had progressed to a dangerous level. It had produced auricular standstill with idioventricular rhythm and a rate of 50 and a QRS complex of 0.12 of a second duration in the electrocardiogram. Lavage of the intestine for twenty-four hours resulted in reversion of the heart to a sinus rhythm with a rate of 68 per minute. The concentration of potassium in the lavage fluid averaged about ¾ of its concentration in the blood serum, and as much as 1.2 grams of potassium was removed in twenty-four hours of lavage. We would emphasize the necessity of repeated electrocardiograms and serum potassium determinations in the management of acute renal shutdown. This is necessary to decide when lavage must be instituted. We would also emphasize the hazard in acute renal insufficiency posed by hyperpotassemia and the efficiency of intestinal lavage in combating this hazard.

SUMMARY

1. The pathogenesis of lower nephron nephrosis is reviewed.

2. The logical management of this syndrome based on the pathologic physiology is outlined.

3. The importance of hyperpotassemia in acute renal insufficiency is emphasized.

4. Intestinal lavage is shown to be an effective means for extrarenal clearance of potassium and urea.

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Discussion

Dr. Walter B. Martin, Norfolk: Doctor Wood's paper is of special interest in that he has pointed out the degree of potassium retention occurring in acute renal insufficiency with anuria, and has emphasized the part that this may play in causing cardiac deaths during such episodes. He has also demonstrated the possibility of correcting hyperpotassemia by lavage of the upper portion of the small bowel. Of particular interest is his third case, in which the serum potassium had accumulated to a high and dangerous level, and in which he was able to reverse this trend and restore the heart function to normal by intestinal lavage. Various methods have been proposed for combating the accumulation of dangerous substances in the blood in patients suffering from acute renal insufficiency, such as peritoneal lavage, with or without gastric lavage, exsanguinating transfusions, and the artificial kidney. The very fact that these rather difficult and laborious procedures have been introduced emphasizes the temporary nature of the syndrome that is commonly referred to as lower nephron nephrosis. The essential problem in this condition is to "tide the patient over" until the tubular damage can be repaired. This can be well understood, if we consider the nature of the condition. Acute renal damage, resulting in rapid onset of renal insufficiency, may occur as the result of a number of causes, such as shock from exsanguination, extensive burns, crush injuries, hemolytic transfusion reactions, and chemical poisoning. The lower segment of the nephron is the location of the greatest damage. The lining cells of the tubules undergo necrosis and the tubule takes on the attributes of a dead membrane. Filtration from the glomeruli may not be materially affected, but unhibited absorption of this filtrate by the tubule may result in complete anuria, lasting for days. Recovery from this condition depends upon regeneration of the lining cells of the tubules, and the restoration of their normal selective, absorptive function. In complete anuria, there is a rapid building up of toxic substances in the blood. It is estimated that natural repair of the tubules may take place in eight to twelve days, if the original cause of the injury ceases to operate. It is evident, then, that measures designed to remove these substances by extra renal routes are of great potential value. If these substances can be kept below the critical level for a relatively short period of time, the patient may recover by natural processes. Without going into discussion of the mechanism by which the tubular damage may be accomplished, it might be well to point out two phases of treatment. The initial phase of shock must be combated with suitable blood substitute, in a case of severe blood loss or destruction by whole blood, or in extensive burns, by plasma. This must be accomplished in sufficient volume and with sufficient speed to restore blood volume, and blood pressure to a suitable level as rapidly as possible, so as to minimize the extent of the renal damage. There is little evidence that the kidney lesion is progressive, once a proper circulatory mechanism is restored, and acidosis prevented or controlled. From that point on, as has been emphasized by Dr. Wood, great care must be taken to maintain a proper water balance. The first phase may change rather abruptly to the second, and keen clinical judgment is needed at this point. Van Slyke has pointed out the value of the copper sulphate falling drop method in estimating the specific gravity of the blood and the use of this as a guide in determining the proper level of fluid intake. The copper sulfate method of Van Slyke was of great value on the battlefront in dealing with the numerous cases of shock resulting from burns, crush injuries, dehydration and exsanguination. It made possible a rapid calculation of the amount of blood substitutes needed in each case. During the period between the restoration of the circulatory function and the recovery of the damage to the renal tubules, the problem becomes one of maintaining the nutrition of the patient, and a normal water balance, and the removal, by extra renal routes, of toxic accumulation. It is in this field that Dr. Wood's contribution is most valuable.

Dr. J. Edwin Wood, Jr., Charlottesville: Dr. Hicks has done a great deal of detail work on this subject, and I am sure would like to tell you a good deal more about our findings. I should like to mention one or two other things in which we are interested.

Dr. Martin has said, "When you get to the right point stop there and don't go any further." He is right. It is quite true that you can drown anuric patients, and rather easily, by the over-administration of fluids. I am quite sure that many present will remember the time honored thought that the best way to make the kidney put out urine was to force fluids intravenously. Like so many generalizations, this does not fit certain specific cases.

The literature calls attention to the fact that the stomach fluids contain potassium. We thought maybe a good way to treat potassium poisoning was by washing out the stomach instead of the intestine, but it is not an adequate method. The wall of the intestine is a semipermeable membrane and is the best available structure of its kind for extra renal clearance by lavage.

As Dr. Hicks showed you in his paper, the concentration of sodium in the perfusion fluid remained approximately the same as in the blood, but as there was no potassium in the perfusion fluid, this substance came out in fairly large amounts.

A Member: I should like to ask a question of Dr. Hicks. I am interested in how they keep the intestine

from riding up on the inflated balloon. I know in chronic ulcer and colitis you have a great difficulty in keeping the balloon blown up. If you deflate the balloon you see the fluid go beyond the point of suction, which defeats the purpose. I am interested in knowing how they handle the situation.

DR. HICKS, closing the discussion: We did deflate the balloon, so the tube would not progress on down the bowel. We recovered 26.5 out of 28 liters of the lavage fluid in one individual which was very satisfactory. I do not know whether or not this success was due to the speed at which we administered the fluid, but this must be a factor. One patient developed diarrhea, and that was thought to be due to the lavage fluid reaching the lower bowel in appreciable quantities, so such successful recovery of lavage fluid was not always possible.

I should like to thank Dr. Martin for his valuable discussion of this problem.

Deaths from Influenzal Meningitis Almost Eliminated by Drugs.

A recovery rate from influenzal meningitis of 96 per cent following treatment with sulfadiazine and streptomycin is reported by Drs. Emanuel Appelbaum and Jack Nelson of the New York City Health Department in the June 24 J.A.M.A.

Before the use of sulfa and antibiotic drugs, the mortality from the disease varied from 90 to 100 per cent.

The authors further state that this form of meningitis (an inflammation of the membranes that envelop the brain and spinal cord) is essentially a disease of infants and young children. Of 90 patients treated, 87 recovered and three died. In the vast majority of these patients, there was marked improvement in six days after treatment with streptomycin was begun.

Residual damage, including deafness and defective vision, occurred in nine of those who survived.

Reports Development of Laboratory Tests for Diagnosis of Virus Diseases.

Development of practical laboratory tests for diagnosing virus and rickettsial diseases is reported by a Chicago doctor in the May 20 *J.A.M.A.* The tests were used on 349 patients, Dr. Albert Milzer of the Medical Research Institute, Michael Reese Hospital, says.

According to the author: "In the past, laboratory techniques for diagnosis of the virus and rickettsial infections have been too complicated for the routine hospital laboratory."

"These procedures were largely limited to research laboratories. Recently tests for many of these diseases have been developed to the point that hospital laboratories can perform many of these tests and be of great diagnostic aid.

"The fact that virus and rickettsial diseases such as psittacosis [parrot fever], influenza and Q fever may closely simulate a typical [not characteristic] pneumonia serves to emphasize the diagnostic value of conducting serologic tests for patients with infections of the respiratory group.

"Furthermore, the full benefits of chemotherapy are more apt to be achieved if the exact basis of the disease is known."

The procedures reported do not include a satisfactory routine laboratory test for poliomyelitis.

SARCOIDOSIS*

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The riddle of sarcoidosis, or the sarcoid of Boeck, remains unsolved after fifty years of observation, study, and research. However, the efforts of investigators in the past have not been too strenuous because the disease was thought to be rare, as well as having a low mortality. Recently, with the advent of X-ray surveys and the routine X-ray examination of all armed service personnel on induction and discharge, many cases otherwise unsuspected were found.

This survey and study comprise cases diagnosed in a general Veterans Administration Hospital and in two general civilian hospitals. A total of thirty-eight patients have been studied. The full initials of the cases will be used, as it is probable that the same patients have been, or will be, reported from other hospitals in later studies. The benign course of sarcoidosis makes this a definite possibility. In fact, two of the cases studied here have already been reported in the literature.[1]

The original description by Boeck[2] of a disease of the skin characterized by nodular and infiltrative lesions, which showed on microscopic examination epithelioid tubercles without caseation, has now been modified to include the invasion of all of the body tissues by these hard tubercles. Many authors have stressed the fact that this disease is systemic and protean in nature and should be properly called sarcoidosis rather than sarcoid. Chart I shows the distribution of involved tissues in our cases.

Chart I
Sarcoidosis — Statistics
38 Cases
Average age for group—27 years.
Youngest—19 years. Oldest—66 years.

Negro patients	33	87%
White patients	5	13%
Male* patients	37	97%
Female patients	1	3%
Tissues Involved (Multiple)		
Lungs	28 patients	74%
Glands	25 patients	66%
Eye	16 patients	42%
Skin	10 patients	26%
Bone†	2 patients	5%
Nervous System	4 patients	10%
Spleen	2 patients	5%
Mucous Membranes (nose)	3 patients	8%
Heart	1 patient	3%
Liver	1 patient	3%
Tissues Involved (Single)		
Lungs	7 patients	18%
Skin	1 patient	3%

The current literature contains reports of nearly two thousand cases; and when one includes such conditions as uveoparotid fever (Heerfordt's disease), granuloma of lacrimal glands (Mikulicz's disease), subcutaneous infiltrations (lupus pernio), cystic formation of bones (Jungling's disease), and regional ileitis, the number is increased several fold. These are now considered by many to be forms of sarcoidosis.

Several theories as to the etiology of sarcoidosis have been considered since its discovery as a clinical entity. Pinner[3] expressed an opinion in which we concur; he said, "no one has been able to prove his theory convincingly, even to his own complete satisfaction." However, it seems that the majority favor the tubercle bacillus, or its products, as the

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Read before the annual meeting of the Medical Society of Virginia, at Fort Monroe, October 9-12, 1949.

*Most of cases came from Veterans Administration Hospital having only male cases.

†Very few cases had X-ray of bones unless there was a specific complaint.

causative agent in patients, with high immunity and low sensitivity. Other theories include the non-specific response of tissues to various micro-organisms; a virus infection causing a chronic granulomatous response, and a pathological entity similar to Hodgkin's disease. Meyer[4] has recently given an excellent review of this problem in which he points out the evidence incriminating the tubercle bacillus. Freudenthal[5] also gives further indirect proof in a recent pathological study.

The symptoms of sarcoidosis are characteristically bizarre and non-specific. Even with extreme pathological changes these may be minimal or absent, especially when the skin, lymph glands, and lungs are involved. The exceptions are lesions of the eye, involvement of the cranial nerves, and the central nervous system.

In the series of cases studied, the following symptoms were noted: weakness, pain in back, legs, abdomen, joints; anorexia and weight loss; eye pain and disturbance of vision; lacrimation; redness of eyes; fever (low grade); cough; dyspnea; tachycardia; muscle twitching; paralysis; swelling of joints, also fingers, hands, and toes; hemoptysis; mental confusion; "lumps" on the skin; vertigo; nausea and vomiting. These symptoms showed a tendency to regress when the disease became inactive, unless function of organs or nerves was destroyed.

The findings in sarcoidosis may be minimal, as a few scattered skin lesions on the trunk, face or arms; or one may note palpable lymph nodes, either cervical, axillary, or inguinal. These glands are firm, movable, and painless. Occasionally, the X-ray film will reveal paratracheal and hilar adenopathy or diffuse nodular densities. These are usually "picked up" on routine physical examination or in the course of diagnostic procedures for other disease conditions. Not infrequently the pathologist, surprisingly, will report sarcoid tubercles in routine tissue examinations. On the other hand, as would be expected, occasionally marked symptoms and definite signs cause the patient to seek medical treatment for this as a primary condition. In our series, seven patients (18%) gave no symptoms and three (8%) had irrelevant complaints. The remainder of the group gave one or more of the previously mentioned symptoms.

As has been noted by Reisner[6] and others, the majority of the cases occurred in Negroes (87%) with males predominating. The sex ratio is not significant as most of our cases were from a Veterans Hospital not admitting females. The average age was twenty-seven years with the youngest nineteen and the oldest sixty-six years.

The clinical laboratory has not been too helpful in aiding or confirming the diagnosis when sarcoidosis was suspected. The usual observations in this condition have been adequately reviewed by Freiman.[7] These consist of a moderate monocytosis and an occasional eosinophilia. The sedimentation rate is usually elevated but does not parallel the activity of the disease process. In our series seventeen had elevation of their rates out of twenty-six tested (or 65%). The total protein may be increased above eight grams per 100 c.c., but out of thirty-two examinations only five (16%) showed a significant increase. A reversal of the A/G ratio has been a more consistent finding. Nineteen patients out of thirty-two (58%) showed a reversal. Twenty-six patients had sputum examinations and these were all negative. A tuberculin test was done on twenty-seven patients with three positive reactors. Two negative reactors (cases R.M.H. and D.E.) later became positive and had a clearing of the signs of sarcoidosis in their chests.

An X-ray film of lungs gives the best evidence in suspecting sarcoidosis, and, as pointed out at the beginning, has led to the discovery that this disease is not as rare as was suspected a decade ago. Plates I

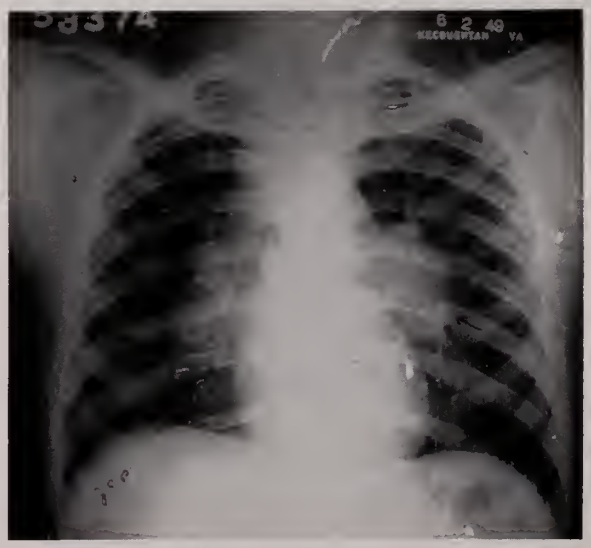

Plate I. Case 27--JCP. Marked degree of bilateral hilar and right paratracheal adenopathy (potato nodes).

Plate II. Case 11—CJF. Diffuse symmetrical, parenchymal nodular infiltration.

and II show films of sarcoid lesions in the chest. Garland[8] has very clearly described these early roentgenological findings. Charts II and III give the roentgenographic criteria and differential diagnosis. But, with this fairly clear X-ray pattern of the disease, everyone is agreed that films are not pathognomonic. Even when an associated bone lesion is found, one still cannot be too confident of the diagnosis. Plates III and IV show typical bone and skin lesions. Chart IV shows the typical findings in the skin and eye.

Chart II

Sarcoidosis—X-Ray Criteria

Pulmonary

The pattern is variable as to character, extent, distribution, and is not pathognomonic. These findings in order of frequency are:

1. Bilateral hilar and right paratracheal adenopathy with or without associated parenchymal infiltration. The glands are discrete and show a lobulated border because of over-lapping. This pattern is an extremely valuable roentgenographic sign.
2. Diffusely disseminated changes consisting of discrete miliary or nodular densities, without calcification, in a patient who is clinically well.
3. Diffuse or localized linear or strand-like densities following the broncho-vascular radicles. This results in prominent root and peripheral shadows.
4. Massive hilar node enlargement (potato node) in a person who presents no complaints.

Differential Diagnoses:

Miliary tuberculosis; Hodgkin's disease; silicosis; hemosiderosis in mitral valve disease; coccidiosis; erythema nodosum; vascular congestion; lymphangitic carcinosis; lymphosarcoma; mycotic infection; beryllium pneumonitis and granuloma.

Chart III

Sarcoidosis—X-Ray Criteria

Bone

There is a predilection for the small bones of the hands and feet. The process begins in the medullary cavity and is difficult to detect until there is cortical involvement.

1. "Punched out" lesions with no local reaction in adjacent bone.
2. When perivascular infiltration of Haversian canals occurs, destructive changes in the cortex result in a reticular "lace-like" pattern with or without pathological fracture.
3. May have a combination of 1 and 2.
4. Occasionally, in a rapidly expanding lesion, there will be destruction of a portion of bone.
5. The periosteum is not involved and the joint space is intact; therefore, there is very little impairment of function.

Differential Diagnoses:

Hyperparathyroidism (osteitis fibrosa cystica); polyostotic fibrous dysplasia; multiple enchondromata; gout; rheumatoid and hypertrophic arthritis; fungus diseases; syphilis; neurctrophic changes; tuberculous dactylitis; cartilaginous "rests"; and xanthofibroma.

Plate III. Case 15—BRH. Irregular cystic areas of rarefaction with multiple pathological fractures of the phalanges.

Chart IV

Sarcoidosis—Skin Lesions

1. The superficial type (Besnier-Boeck) is varied in appearance. It may be macular, plaque, disseminate nodules, both small and large. Larger nodular lesions often have a flattened surface which sometimes may

Case No.	Initials	Age Sex Race	Symptoms	Org. Inv.	X-ray	Biop Sy	TBN	A/G	Sed. Rate	Miscellaneous Findings	Present condition	Duration Mos.	Case No.
1	MA	21MN	None. (Routine X-ray of chest).	L,G	L+	G+	n.d.	1.8	norm.	Sputum−.	1949. Asymptomatic.....	35	1
2	SDA	26MN	None. (Routine X-ray of chest).	L,G	L+	G+	−	3.0	elev.	Sputum−. Tbc.+ and Tbc. adenitis at 3 yrs. of age.	1949. Asymptomatic.....	72	2
3	EA	23MN	Productive cough and chest pain.	L,G	L+	n.d.	2nd+	rever.	elev.	Sputum−. Hookworm ova in stool.	1947. Asymptomatic. X-ray of chest unchanged.	45	3
4	BBB	26MW	Tachycardia, weight loss, fever.	L,G, B,H	L+ B+	G+	−	1.9	n.d.	Sputum−. TP 8.0.	1949. Dyspnea on exertion, ataxic gait, tachycardia.	76	4
5	CAB	22MN	Syncope, night sweats, fever, weight loss, anemia, dyspnea, swelling of eyelids.	L,E	L+	n.d.	−	2.8	elev.	Sputum−.	1947. X-ray showed advanced Tbc. of left lung. Guinea pig inoculation was +. 1949 symptomatic.	61	5
6	SB	22MN	Chest pain.....	L	L+	n.d.	−	0.8	n.d.	Sputum−. Sister has same condition.	1947. Cough, weakness, dyspnea. X-ray of chest unchanged.	7	6
7	JRD	30MN	None. (Routine X-ray of chest).	L,G, NM, CNS, E	L+	G+	−	0.5	norm.	.....	Died 1948 of Tbc. meningitis with abscesses of psoas muscle, groin, and brain.	12	7
8	WHE	49MN	Twitching eyelid, throbbing in throat.	L,CNS	L+	G−	2nd+	1.8	n.d.	Gastric washing −.	Died 1947 with convulsions. NP consultation showed a cerebral lesion. No autopsy.	7	8
9	DE	21MN	Anorexia, eye pain, dizziness, weight loss, pain and swelling of joints.	L,G,E	L+	G−	+	1.2	elev.	Kahn+.	1947. Marked eye symptoms. X-ray chest−, Tbn.+. Treated with Tbn. and Typhoid vaccine. 1949 chest X-ray−.	39	9
10	HF	22MN	Chest pain, cough, blood streaking, weakness, fatigability	L,G	L+	G+	n.d.	0.9	norm.	Sputum−.	1947. X-ray of chest−.	31	10

11	OJF	27MN	Pruritus, drowsiness, precordial pain, nervous stomach, cough, weight loss.	L,G,S	L+	S+	n.d.	n.d.	n.d.	.....	1949. X-ray of chest−. Tbn.−. Sed. Rate normal. Nodule from epididymis+.	13	11
12	HG	23MN	Cough and weight loss.....	L,G	L+	n.d.	−	1.4	elev.	Kahn+. Sputum−.	No follow up.....	0	12
13	FHH	30FW	Weakness, cough, hemoptysis, fever, anorexia, weight loss.	L,S	L+	S+	−	0.9	elev.	Sputum−. Renal lithiasis.	Died 1947 in pulmonary failure.	48	13
14	LBH	23MN	Eye pain, chest pain.....	E,Sp., Li	L−	n.d.	−	1.1	n.d.	Left eye enucleated.	1949. Asymptomatic. Chest X-ray−.	48	14
15	BRH	48MN	Pimple on nose. Swelling of finger.	L,B,S, E,NM	L+ B+	n.d.	n.d.	2.3	n.d.	.....	1947. Unchanged.....	31	15
16	RMH	25MN	None. (Routine X-ray of chest).	L	L+	n.d.	−	2.5	norm.	Sputum−. Kahn+.	1947. Weakness and palpitation. X-ray of chest−. Tbn.+. Kahn+. 1949 many colds.	39	16
17	LTH	23MN	Weight loss. (Routine X-ray of chest).	L	L+	n.d.	−	norm.	norm.	.....	1947. X-ray of chest−.....	15	17
18	WHH	20MN	Watering and pain in eyes, swelling of glands, skin bumps.	L,G,S, E	L+	S+	−	3.8	elev.	Sputum−. Kahn+. Rt. eye enucleated.	1946. X-ray unchanged. Tbn.−. Skin biopsy+.	23	18
19	LH	20MN	Pain in stomach, chest, neck; vomiting, cough.	L,G,S	L+	G+	−	1.4	norm.	Sputum−.	1949. Same symptoms. X-ray chest 1948 unchanged.	48	19
20	PEJ	38MN	Swollen glands, back pain, weight loss, weakness, chills, fever.	L,G,E	L+	G+	−	0.6	n.d.	.....	No follow up.....	0	20
21	JEJ	22MN	Back pain, eye pain, swelling of neck and wrists, fever, headache, night sweats, dyspnea, dizziness.	L	L+	n.d.	n.d.	0.8	elev.	.....	1947. X-ray of chest unchanged.	7	21
22	JWL	35MW	Pain in hips, shoulders, knees.	L	L+	n.d.	n.d.	n.d.	n.d.	Sputum−.	No follow up.....	0	22
23	GM	26MN	Dyspnea, bumps on skin....	L,G, Sp.,S, E	L+	S+	−	3.6	elev.	Sputum−. TP 8.4. Kahn+.	1949. Heart enlarged. Infiltration rt. apex. CNS syphilis.	68	23
24	MN	22MN	Weakness, discomfort in eyes. (Routine X-ray).	L,G,E	L+	G+	n.d.	2.5	n.d.	Sputum−.	1949. Asymptomatic.	80	24

Case No.	Initials	Age Sex Race	Symptoms	Org. Inv.	X-ray	Biop Sy	TBN	A/G	Sed. Rate	Miscellaneous Findings	Present Condition	Duration Mos.	Case No.
25	JMM	66MW	Asthma.....	L	L+	n.d.	–	0.8	elev.	Sputum–.	Died 1949 of Hypertensive Arteriosclerotic ht. disease with pul. emb. and infarct.	40	25
26	WN	23MN	Mental confusion, convulsions, bumps on skin, swelling of fingers; eye discharge.	G,S,E, CNS	L–	G+	–	0.6	n.d.	.....	Received HN_2 therapy. 1949 developed tbc. pneumonia. Sputum+.	57	26
27	JCP	26MN	Nausea, anorexia, back pain.	L,G	L+	G+	–	2.1	norm.	Sputum–.	1949. Unchanged.....	4	27
28	LTR	27MN	Anorexia, fatigue, wt. loss, cough, skin bumps.	L,G,S	L+	S+	–	1.3	elev.	Sputum–. Inv. T,CF4.	1949. Back pain and chest pain.	48	28
29	OR	24MN	Pain and redness of eyes....	L,G,E	L+	n.d.	n.d.	n.d.	n.d.	Left eye enucleated.	1945. X-ray of chest unchanged.	22	29
30	AGS	26MW	Fever, chills, chest pain, rusty sputum, cough, weakness, weight loss.	L	L+	G–	–	1.4	norm.	Sputum–. Yeast organism in sputum. Treated with KI and monilia vaccine.	.....	40	30
31	NS	23MN	Burning eyes, knots in eyelids, stomach pain, vomiting.	L,G,E	L+	G+	n.d.	n.d.	n.d.	Left eye enucleated.	1946. Unchanged.....	65	31
32	JHS	23MN	Cough, dyspnea, chest pain, lumps in skin.	L,G,S	L+	G+ S+		0.3	elev.	Sputum–. Mother died of Tbc.	1943. Unchanged.....	13	32
33	CDT	19MN	Chest pain, tachycardia, diminished vision, vertigo, headache, swelling of ankles.	L,G,E	L+	n.d.	–	n.d.	n.d.	Sputum–.	1948. Same symptoms. X-ray of chest negative.	39	33
34	EWW	21MN	Cough, chest pain, weakness, wt. loss, loss of smell, fever, itching, painful joints, paralysis, warts on penis, anus, face.	L,G,S CNS	L+	G+ S+	–	1.2	elev.	Gastric wash.–. Twin of case 35.	1949. Dim vision. X-ray unchanged.	51	34

35	JBW	21MN	Chest pain, dyspnea, epistaxis, hemoptysis, swelling eyelids, painful parotids and testicles, swelling of ankles and legs, constipation.	L,G,E NM	L+	G+	–	0.9	elev.	Sputum–. Brother of case 34.	Died 1949. Had received HN_2 therapy. Developed bone and pulm. Tbc. and died of Tbc. meningitis.	32	35
36	REW	21MN	Chest pain, cough, photophobia and blurring of vision.	L,G,E	L+	G+	n.d.	1.0	n.d.	.....	1949. Unchanged.....	42	36
37	RW	49MN	Fatigability and skin lesions.	S	L–	S+	n.d.	1.5	elev.	Sputum–.	1948. Fusion of spine for Tbc. X-ray of chest–.	51	37
38	FY	20MN	Redness of eyes.....	L,G,E	L+	G+	–	1.1	n.d.	1° A.V. Block.	1947. Difficulty in vision...	42	38

Table I—Legend: B—bone; CNS—central nervous system; E—eye; elev.—elevated; F—female; G—lymphatic glands; H—heart; L—lungs; Li—liver; M—male; N—Negro; n.d.—not done; norm.—normal; NM—nasal mucosa; Org. Inv.—organs involved; Sp.—spleen; Tbc.—Tuberculous; Tbn.—tuberculin; W—white; +—positive; –—negative; 2nd—2nd strength.

Plate IV. Case 32—JHS. Superficial flattened nodules, of varying size, involving the back and arm.

be loculated. Occasionally, an annular type of sarcoid is present with central atrophy. Ulceration is rarely seen. The color is often that of the skin, but at times may be bluish-brown or purplish red. On diascopic pressure the small yellowish nodules do not completely blanch. In the colored race there is occasional depigmentation.

2. The deep type (Darier-Roussy) consists of subcutaneous nodules, not infrequently resembling erythema induratum.
3. The above lesions may also occur on the mucous membranes, especially in the nose.

Differential Diagnoses:

Lupus erythematosus; tuberculosis cutis; late nodular syphilis; leukemia cutis; adenoma sebaceum; xanthoma; multiple keloids; leprosy; erythema nodosum; erythema induratum; granuloma annulare; nodular and cystic acne; and paraffinoma.

Sarcoidosis—Eye Lesions

Eye involvement may be a most serious manifestation of the disease, often causing the loss of the eye or impairment of vision. Invasion of the optic nerve is usually associated with sarcoidosis of the brain. The following conditions are usually noted:

1. Iritis or iridocyclitis.
2. Nodules of the cornea with opacities.
3. Synechiae and glaucoma.
4. Retinitis and choroiditis.

It then follows that the positive final diagnosis of sarcoidosis rests on the microscopic examination of tissue. Here one has also to be careful, for often a foreign body reaction will produce hard tubercles in a person whom one feels certain does not have sarcoidosis. In reviewing material and case histories for this paper, one patient was found with a sarcoid-like lesion resulting from a lip injury caused by a dental drill. Another case, having active pulmonary tuberculosis, was operated on for an acute appendicitis. On pathological examination this was found to be a sarcoid lesion of the appendix. They had no other evidence of sarcoidosis and were not included in the series.

The histological findings in sarcoid are characteristic and, when linked with signs of multiple involvement of tissues, the diagnosis is evident. The pathological picture of these hard tubercles shows a collection of large epithelioid cells with occasional giant cells and no caseation. There is no surrounding halo of lymphocytes, no organisms are ever found, and, even in large clusters, the tubercles do not become confluent. The findings are uniform in all tissues. Stone[9] has emphasized the absence of inflammatory changes and the marked tendency to fibrosis. The Kveim test is helpful, though not always accurate, and is a technically difficult procedure.

Once the diagnosis is made, one is then confronted with two problems, the treatment and prognosis. Therapy of this disease, in the past, has not been too satisfactory. Results are often confused by the spontaneous regression of the demonstrable pathology and the lack of specific symptoms. In fact, one may state that the search for a specific therapeutic agent has been as fruitless as the discovery of the etiologic agent.

Most men today treat the symptoms only when function is impaired, hoping that the course will be benign, as it usually is, and that no vital structures will be involved.

In our series no attempt at specific therapy has been made. Rest, nourishing food, adequate vitamins and essential minerals are the best treatment to date. Many cases develop tuberculosis, in our group eleven per cent, so the rationale of this is evident. A recent series treated with calciferol and dihydrotachysterol by Curtis and Grekin,[10] while impressive, has had too short a follow-up for a disease with the tendency to spontaneous regression. Snider[11] has used nitrogen mustard with no conclusive benefit; in fact, one patient, an identical twin (J.B.W.), became worse after treatment. He later developed bone and pulmonary tuberculosis and recently died of tuberculosis meningitis. The other twin (E.W.W.), untreated, has remained well.[1] A recent personal communication from Jones[12] reports on the use of urethane. He has been impressed by the results but the follow-up period has been too short for definite evaluation.

Now, mostly abandoned, is the use of antileprol, arsenic, bismuth, gold, radium, tuberculin, ultraviolet light, and X-ray therapy.

There have been no series reported which used penicillin, Aureomycin, chloromycetin or para aminosalicylic acid.

The follow-up period in our series has ranged from one visit to eighty months, with an average of thirty-five months. As has been noted by others, most of the patients are living and well. Some have more X-ray evidence of progression than symptoms, and unless each patient is completely surveyed on follow-up this will be missed. Several have developed tuberculosis—in our series eleven per cent. Others have become crippled with pulmonary insufficiency. Five have died, giving a thirteen per cent mortality. In spite of this, one can usually give a fairly good prognosis. It has been our impression that anything which tends to break down the natural resistance of the body has a definitely unfavorable effect on the prognosis. Table I is a composite picture of all cases.

SUMMARY

1. Thirty-eight cases of sarcoidosis have been studied and reviewed.
2. We found sarcoidosis more common than it had been thought to be; many cases were picked up on routine X-ray films. It occurred mainly in young adult negro males.
3. The etiology is unknown. The relationship to the tubercle bacillus or its products has not been clarified, but we feel as many others that there may be a common etiological agent.
4. Symptoms may be absent or minimal even with fairly wide-spread disease.
5. It is a generalized disease involving many structures and organs.
6. There are no specific laboratory findings.

7. X-ray films of the chest and bones, although suggestive, are not pathognomonic.
8. The diagnosis is made by exclusion, after review of the history, physical examination, laboratory findings, and X-ray films. If, in addition, biopsy of tissue is characteristic and there is multiple involvement of organs, the diagnosis is fairly certain.
9. There is no specific therapy. The lesions may regress spontaneously in a variable period of time.
10. The prognosis should be guarded. Several cases developed tuberculosis and died; others required enucleation of an eye, and some developed chronic pulmonary insufficiency.

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Fermentation Drug Combats Eye Infections.

Successful treatment of eye infections with sodium propionate, a drug derived from a substance produced in a fermentation process, is reported by Dr. Frederick H. Theodore of Mount Sinai Hospital and the Manhattan Eye, Ear and Throat Hospital *J.A.M.A.* for May 20.

The drug is effective against all the bacteria causing common eye infections and against fungi.

He states that clinical results in some 1,200 patients treated with sodium propionate appear to be as good as those obtained in acute eye infections by treatment with any of the newer antibiotic drugs.

Sodium propionate appears to be a useful supplement to the antibiotic drugs and sulfa drugs, which in some eye infections often prove to be of little permanent value because of the development of bacterial resistance and drug sensitivity, he indicates. Results from use of sodium propionate in these conditions are gratifying.

The fact that sensitivity to the drug is rare makes it an especially valuable agent in infections in allergic persons or in cases in which drug sensitivity already has occurred.

PREINVASIVE CARCINOMA OF THE CERVIX: AN OPPORTUNITY TO REDUCE CANCER MORTALITY*

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Though cancer of the cervix is one of the cancers most amenable to treatment, the rate of cure is far from satisfactory. It is probable that less than 30 per cent of all women treated in the United States for cancer of the cervix are alive and free from the disease at the end of five years. This rate is too low for cancer in an easily accessible non-vital organ. Without question, with our present knowledge, it can be improved.

Deaths from cancer can be decreased by prevention, improved treatment, and earlier diagnosis. At this time we know too little about the causation of carcinoma of the cervix to accomplish much more in its prevention; and there is no foreseeable improvement in the technique of present methods of treatment which can be expected to lower the mortality greatly. However, right now much can be accomplished by earlier diagnosis. The importance of early diagnosis is illustrated in Table I which shows how the cure rate drops as the disease advances:

TABLE I
FIVE-YEAR CURE-RATE BY STAGES
LEAGUE OF NATIONS REPORT

	Per cent
Stage I	57.2
Stage II	37.6
Stage III	22.0
Stage IV	5.5
All Stages	27.6

Despite the time which has elapsed since these figures were published, they remain essentially true for results today. Therefore, it is a tragedy that even now the majority of patients are being first treated late in the disease. Figure 1 shows the stage distribution of cases first treated at the Medical College of Virginia during the ten year period 1934-1943. In only 10 per cent of the cases were the lesions grossly confined to the cervix.

*Read at the annual meeting of the Medical Society of Virginia, at Fort Monroe, October 9-12, 1949.

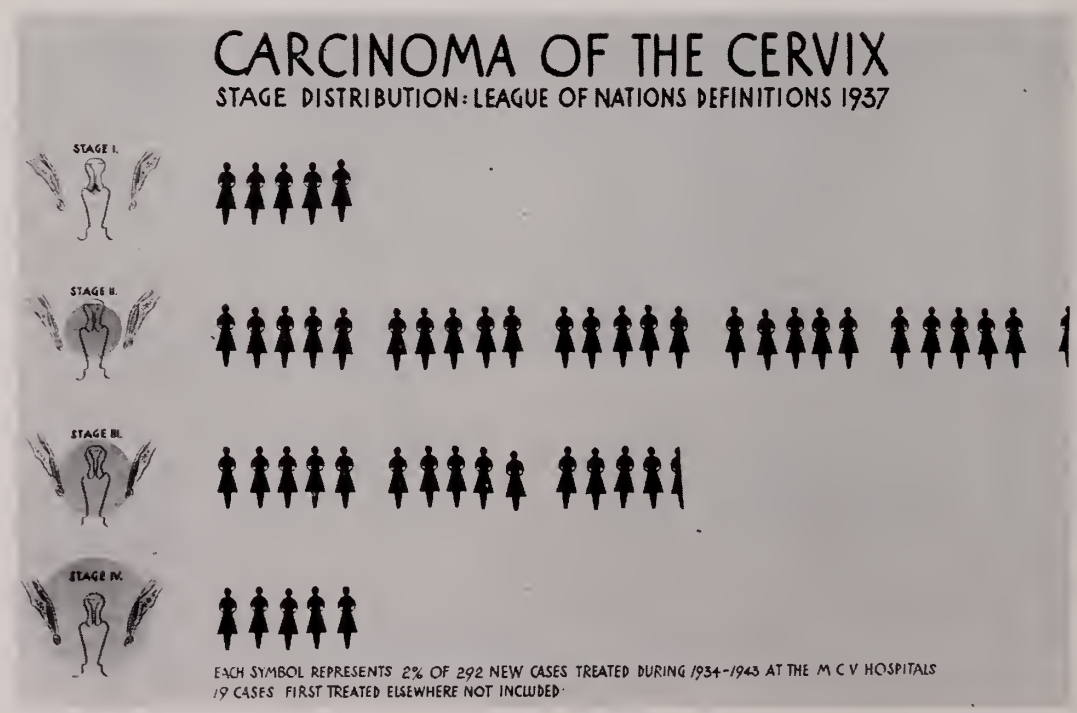

Fig. 1.

There are many laudible and promising activities aimed at bringing about earlier diagnosis of *invasive* carcinoma of the cervix, but so long as we maintain that existing invasion is essential to the diagnosis of cancer, we miss the opportunity to diagnose and treat truly early carcinoma.

The concept that carcinoma is at first intra-epithelial and for the time non-invasive is not new. In 1912 Kermauner and Schottländer described changes in surface epithelium adjacent to invasive carcinoma of the cervix identical with the changes in the invasive epithelium itself. From this observation there was to develop the concept that the change in the surface epithelium was the beginning carcinoma and that invasion was a later event in the disease process. In 1927 and later Schiller described these surface changes as carcinoma in a pre-invasive stage. In 1932 Broders described similar changes in various organs and stated that epithelium cannot be considered non-carcinomatous, or at the most only pre-carcinomatous, only because it is within the confines of the so-called basement membrane. Since then this theme, with reference to the cervix, has been developed by Smith and Pemberton, TeLinde, and others.

In the vaginal portion of the normal cervix the epithelium is of the stratified squamous variety. There is a gradual transition of the type of cells from the base to the surface. In the condition under discussion there is a loss of the normal stratification, the cells vary in size and shape, mitotic figures are frequent, and there is nuclear hyperchromatism. These changes are believed to be identical with those in the actually invasive epithelium of frank carcinoma. TeLinde believes that the carcinomatous changes begin in the basal layer of cells.

It must be stated that this subject is a controversial one. Furthermore, even among pathologists who believe in the concept, there will be those who will disagree in specific cases. In many instances the microscopic picture will be borderline and the diagnosis uncertain.

In 17 or more cases reported in the literature by several writers these intra-epithelial changes have been observed to precede invasive carcinoma of the cervix, and in many instances they have been found to coexist with invasive carcinoma. There is evidence that intra-epithelial carcinoma may exist for years before invasion occurs. Pund and Auerbach suggest that invasion begins about six years after the onset of the pre-invasive phase, and that there may be another six years before ulceration becomes obvious.

If these observations on the existence of a cancerous process for so long before the lesion becomes obvious are true, then our nomenclature must be changed further. One could no longer designate

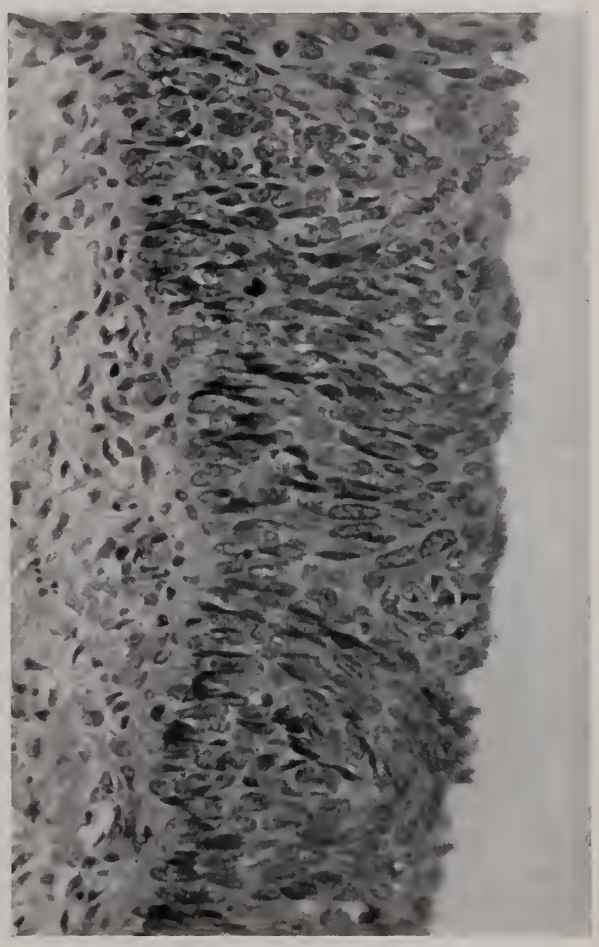

Fig. 2—S-46-3094. 400 X. Illustrative section of case of intra-epithelial carcinoma of cervix. Note loss of stratification, absence of invasion.

stage I (League of Nations) carcinoma as early. Early would be used more properly to define the clinically latent period prior to invasion and gross disease, a stage for which the designation 0 (zero) has been suggested.

If the concept of the ultimate clinical malignancy of these lesions is accepted, the early detection and treatment of them should be encouraged. As aids in the detection of early cervical carcinoma, Schiller has recommended his iodine test and Hinselmann

has advocated the use of the colposcope. The Papanicolaou smear is a useful aid in detecting early invasive carcinoma and positive smears have been reported in carcinoma *in situ*.

As the condition may exist in grossly healthy cervices, the question arises how far we should go in biopsying these apparently healthy organs. It would be neither practical nor possible to biopsy every cervix; but when there are operations for benign disease, or when tests give suspicious findings, or when the cervix is grossly diseased, cervical tissue should be microscopically examined with the possibility of intra-epithelial carcinoma in mind.

As there are differences of opinion regarding the malignancy or potential malignancy of these lesions, and as by definition they are non-invasive at the time of diagnosis, one would expect a difference of opinion regarding their proper treatment; and their proper treatment might well be different from that of carcinoma in its invasive stage. A review of the literature and an analysis of questionnaires sent to the medical schools of the United States and Canada show that the treatment varies from simple cauterization to irradiation and radical surgery. However, the consensus is that total hysterectomy is the treatment of choice, and many advocate conservation of ovarian function in the young patients. With this treatment the cure rate should closely approach 100 per cent, but a warning should be made that this treatment is inadequate for invasive carcinoma and, therefore, associated invasion should be ruled out before it is used. Errors in diagnosis may lead to too much treatment on the one hand or too little treatment on the other.

We have observed these epithelial changes in a number of patients. In some instances it was the sole pathologic process in the cervix and in other instances it was associated with invasive carcinoma. Photomicrographs on several of the casess were projected herewith, and a series of such cases will be reported in detail elsewhere.

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BROMIDE INTOXICATION—REPORT OF TWELVE CASES*

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Today, we find that many nostrums sold across the counter as "pain killers," "headache cures," and "nerve tonics" still contain bromides. These include "B. B. Headache Powder," "Broma-Citra," "Bromo-Seltzer," "C. C. Compound," "C.C.C." or "4 C's," "E. E. Powders," "Goody's Headache Powder," "Heads-Up Headache Powder," "Neurosine," and "Miles' Nervine." Two of the much advertized "headache cures," "Standback Headache Powders" and "B. C. Headache Powders," no longer contain bromides. From such a long list, it is easy for the public to find a "headache cure" or a "pain killer" that relieves their symptoms. The psychoneurotic may find a temporary crutch and the alcoholic may find just the remedy for those symptoms produced by overindulgence, but with continued use, they end up as diagnostic problems in the hospital or in some physician's office. Then, too, there are a few physicians who do not realize the dangers of the drug and hence prescribe it loosely, or who forget to write "N.R." on the prescription. In spite of the fact that the literature contains abundant material concerning bromism, too many cases are still seen.

In 1938, Hanes and Yates[1] stated that 5 per cent of the admissions to psychiatric hospitals were due to bromism. Wagner and Bunbury[2], in a study of a thousand consecutive admissions to a mental hospital, found that 77 had bromide levels over 75 mg. per cent, and that the mental symptoms of 44 of these were due to or increased by bromides. Wuth[3], reported elevated blood bromide values in 21 per cent of a series of 238 patients admitted to the Henry Phipps Psychiatric Clinic of whom 9 per cent showed clinical evidence of bromide intoxication. Thus, it is seen that up to 9 per cent of the admissions in psychiatric institutions may be due to bromism. There are probably innumerable cases seen by physicians and tagged simply as psychotics or psychoneurotics, but many of these patients' vague symptoms may be due to a hidden bromism.

Bromides act mainly by depression of the central nervous system. With increasing blood bromide, there is a reciprocal decrease in the chloride. The bromide ion is contained only in the extracellular fluids except in the case of the red blood cells which are also permeable to chlorides. The brain cells apparently have a special affinity for bromides. However, unless the bromide is in its ionic state, it will not have any action. It is doubtful that just a fall in the chloride ion, without replacement by bromide, will produce any of those symptoms attributed to elevated blood bromide. Hiatt[4] found that when 50 per cent of the chlorides of dogs was replaced by nitrates, there was no apparent change in their behavior. It is hard to explain why some individuals develop symptoms while others do not. Millikan[5] gave sodium bromide to 36 patients over long periods in varying doses and found that all the patients who became psychotic by ingestion of the drug either had a psychoneurosis or a psychopathic personality. They were unable to produce this syndrome in any patient having a stable personality.

The evidences of intoxication[6] are produced because of the drug's action on the nervous system, glands, skin, and the gastro-intestinal tract. The early symptoms of intoxication usually are vague and may appear to be an exaggeration of those symptoms for which the drug was prescribed originally.

Early evidences of bromide action on the cortex are restlessness, weakness, headache, and loss of power of concentration. A little later emotional disturbances appear and then there may be disorientation, hallucinations, confusion, stupor, and coma. Many neurological diseases such as acute alcoholism, tabes, brain tumor, *et al.*, may be simulated. This is easily understood when one remembers that there may appear tremor of the hands and tongue, increased or diminished reflexes, a positive Babinski's sign, inability to walk, and incontinence. Any com-

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bination of these signs and symptoms may produce a most unusual picture; hence, a bizarre mental or neurological picture should merit suspicion of bromism.

The action of the bromides on the secretions of the glands is similar to that of the iodides. The secretions of the lacrimal and the mucus-secreting glands of the respiratory tract are increased and there may then appear the picture of an upper respiratory infection.

Millikan and Paul[7], in a series of 36 bromism cases, found 5 of them to have a skin rash. Detweiler[8] reported 25 per cent had skin lesions in his series. The rash usually occurs on the face and at the roots of the hair and may extend to the neck, arms, chest, and the remainder of the body. It is usually acneiform but may be nodular on the lower extremities and may resemble tertiary syphilis.

The most frequent symptoms referable to the gastrointestinal tract are: anorexia, foul breath, sordes, a thick-coated tongue, constipation, and gastric distress. The latter may be due to gastritis from the hydrobromic acid formed in the stomach.

Too much emphasis cannot be placed on mild intoxications, as these are the patients whose complaints are largely subjective. Here the patient may only complain of feeling tired, weakness, or "not my old self," and if the question concerning bromide intake is left unasked, the diagnosis will be missed.

Care should be exercised in prescribing bromides. Certainly they are useful in the physician's armamentarium, but no patient should be given a prescription for bromides unless he is seen frequently. These patients may continue to have the prescription refilled a number of times without the doctor ever realizing that this happens. There are conditions under which the drug is definitely contraindicated[9]. These are: anorexia, cerebral arteriosclerosis, congestive heart failure, renal pathology, alcoholism, psychoneurosis, dermatitis, dehydration, and tuberculosis.

In cerebral arteriosclerosis the drug will readily produce intoxication and, because in congestive heart failure, salt is restricted, it is easily seen how the blood bromide is quickly elevated. In anorexia, vomiting, and diarrhea where there is a loss of chlorides, intoxication may occur rapidly. Alcoholics may use the drug to relieve that "hang over" feeling that occurs the next day and hence have a continuance of those symptoms of which they are trying to rid themselves. Where there is kidney damage, the bromide ion which displaces the chloride ion is retained even longer. Bromides may produce an irritative reaction in tuberculosis and hence activate a dormant lesion. Some types of dermatitis and acne may be aggravated by the drug. Obviously, mental patients should not receive the drug. When bromides are used, it is most important to maintain the fluid and salt intake.

TREATMENT

Essentially, treatment consists of forcing fluids and the administration of sodium chloride to replace the bromide ion. Six to twelve grams of sodium chloride a day is sufficient to replace the bromide. More than this, if taken orally, may lead to vomiting and diarrhea. As a rule, improvement is not dramatic and it lags behind the falling bromide level. This, then, cannot be used as a guide to the clinical improvement of the patient. It has been stated[10] that with an initial level of 250 mg., a drop to 100 mg. or less may be expected within five to seven days after treatment, and nineteen days will elapse before the patients become mentally clear. Just why this delay occurs in improvement of clinical symptoms is not clearly understood. Weir and Hastings[11] have found that the ratio of bromide to chloride in the brain and the cerebro-spinal fluid is less than in extracellular serum of the rest of the body. This may be the explanation, since possibly the equilibrium between the two is reached more slowly than in other parts of the body; hence tardiness of the replacement of the bromide ion occurs in the nervous system. One other method of treatment may be tried and this is continuous Wangensteen suction.

Since the bromide ion replaces the chloride ion, and the gastric acidity in these cases is partly made up of hydrobromic acid, this reaction may be used as a method of eliminating the bromide. Moreover, Toenhort[12] treated a patient who had a bromide level of 300 mg. per cent with repeated aspirations of the gastric contents and was able to remove 5 grams with clinical recovery in six days. This would be only about 4 per cent of the total bromide content of the body, and if more could not be obtained it is difficult to explain why a patient would improve.

Clinical Study

During a thirty-four month period from April, 1946, through January, 1949, a total of twelve cases of bromism were seen in our hospital (see Table I). There were nine men and three women. The youngest was thirty and the oldest, seventy-six years of age, the average age being fifty. The patients named physicians in six instances as their only source of bromides. One had gotten the drug from his physician and had also been taking "triple bromides" and "Bromo-Seltzer." Another had been treated by his physician with bromides and at the same time was taking "Miles' Nervine." Three patients admitted taking "Bromo-Seltzer" alone, and the source was not obtained from one patient.

Table I.

Summary of Cases

Case Age Sex	Bromide Level MG. % When Diagnosed	Symptoms on Admission	Source of Bromides	Associated Diseases	Improved
1—C.A. 48 M	200	Dermatitis, Tremor of hands	Physician	Psychoneurosis	Yes
2—M.C. 30 F	200	Nervousness, Headaches, "Crying Spells," Antagonistic, Personality Changes	Physician	None	Yes
3—O.L. 52 M	300	Weakness, Nervousness, Worried, Motor activity diminished, Tongue coated	Physician and Triple Bromides Bromo Seltzer	Alcoholic	Yes
4—D.H. 52 M	250	Irrational, Headaches, Chills, Semi-comatose, Dehydrated, Coated tongue, Incontinent, Rales in lung bases	Physician	Alcoholic	Yes
5—B.G. 59 F	300	Confused, "Pains all over my body," Nervousness, Weakness	Bromo Seltzer	None	Treated by L.M.D. at home. Improved.
6—W.S. 51 M	300	Weakness, Dyspnea, Anorexia, Weight loss, Disoriented	Bromo Seltzer	Alcoholic	Yes
7—E.B. 37 M	250	"Felt tired," "Aching all over"	Bromo Seltzer	Psychopathic Personality	Yes
8—J.G. 54 M	75	Dizziness, Occipital pain, Insomnia, Nervousness, Lips slightly cyanotic, Fine rotary movements of both eyes associated with sudden changes in posture	Physician	Alcoholic, Cerebral Arterio-sclerosis	Left hospital. Treated by L. M.D. No follow-up.
9—C.L. 30 M	100	Anorexia, Weight loss, Nervousness, Insomnia, Epigastric distress, "Smothering Spells"	Physician	None	Yes
10—I.K. 76 M	190	"It's all over me," Dizziness, Anxiety	Unknown	Hypertensive Arteriosclerotic Cardiovascular Disease, Cerebral Arteriosclerosis	Yes
11—E.F. 70 F	100	Confused, Nervous, "Unable to be alone," Pneumonia	Physician	Generalized Arteriosclerosis Congestive failure	Yes
12—A.R. 47 M	300	Headaches, Irrational, Tongue Thickly Coated, Pupils pinpoint, Reflexes hyperative	Physician Miles' Nervine	Alcoholic	Died

It was interesting to see the associated diseases which these people had besides bromide intoxication. Four were alcoholics; and there was another alcoholic who also had cerebral arteriosclerosis; one of the four had congestive failure. One had a psy-

chopathic personality, and one was a psychoneurotic. These are the people who should not take the drug, or at least should have been under proper supervision while using it. Associated diseases were not present in three patients.

The blood bromide levels ranged from 75 to 300 mg. per cent. Case 8 (see Table I) was included in this series in spite of his level being only 75 mg. per cent because his symptoms of dizziness, occipital pain, insomnia, and nervousness could have been due to bromism. This is more apt to be true with such a low level when cerebral arteriosclerosis, which this patient had, is present. Unfortunately, he was not treated here in the hospital and there was no follow-up report from the physician who treated the patient.

As can be seen from Table I, many of the symptoms were vague. These included weakness, nervousness, insomnia, dizziness, headache, and anorexia which are hardly specific of any disease. Others had reacted to the drug to the extent that when seen they were irrational or semi-comatose.

Ten patients improved with treatment, one died, and the subsequent course of one (Case 8) is not known.

CASE REPORTS

Five of the twelve cases are presented in more detail because of various points which they illustrate.

Case I.—C. A., a 48 year old man, was admitted to the hospital on December 13, 1948, complaining of "skin trouble." He stated that he had had psoriasis around his elbows for several years. One month before admission, he noted a small papule over his left tibia. He scratched this lesion, and shortly thereafter the skin over the lower tibia became inflamed and oozed a clear serum. Several days before admission, a papular red rash appeared on his face and lower extremities. This had been treated with "Congo Red" and a "sulfa" ointment without any relief of his symptoms. The patient was of low intelligence and several days later, after repeated questioning, he admitted having taken "white capsules with a blue band" which had been prescribed by his local physician.

Physical examination revealed a man continually scratching himself who answered questions slowly and with hesitancy. There was a coarse tremor of his hands. The lesions involving the entire face were erythematous papules. There were areas varying in size from 1 to 5 cms. in diameter over the elbows, lower extremities, and back. They were red and covered with white scales. The skin over the lower two-thirds of the left tibia was acutely inflamed and "weeping." The remainder of the physical examination was essentially negative.

Laboratory findings: The hemoglobin was 78 per cent and the leukocyte count 11,350, with 48 neutrophil segmenteds, 2 neutrophil stabs, 38 lymphocytes, 3 monocytes, 7 eosinophils, and 2 myelocytes. The Kline was negative and urinalysis was normal. Spinal tap was negative. The blood bromide level was 200 mg. per cent.

Course: The patient was given 8 grams of sodium chloride daily and fluids were forced. 50 mg. of "pyribenzamine" were given four times a day for itching, and normal saline dressings were applied to the exudative lesions of the left lower extremity. On December 20, seven days after admission, the bromide level was 100. Three days later it was 75. The patient was discharged 17 days after admission at which time the skin lesions had cleared but he continued to have "nervousness." He was readmitted to the hospital on January 25, 1949, because of itching and oozing of the skin over the upper and lower extremities and face. Physical examination revealed an extensive, "weeping" rash of the face, thighs, scrotum, and the flexor surfaces of the upper and lower extremities. At this time, he had a coarse tremor of his hands. The tongue was red and the angles of the mouth were fissured. The bromide level was 75 at this time but he denied having taken any further medications since the previous admission. He received 12 grams of sodium chloride daily, the skin rash was treated with calamine lotion and oat meal baths, and he was given "pyribenzamine," 50 mg. every four hours. The rash did not improve and on February 1, "pyribenzamine" cream was used topically. Following this there was a marked clearing of the skin and on February 12, the bromide level was less than 75. The patient was discharged the next day at which time his skin was clear. While in the hospital during this admission, he had numerous vague complaints which did not improve with therapy and his behavior was that of a confirmed psychoneurotic.

Many physicians have the misconceived idea that they should consider bromide intoxication only in

those who have a dermatitis. In our series of twelve cases, this patient was the only one who had a dermatitis. In all probability this was not a primary dermatitis, but an atopic one which had simply been aggravated by bromides.

Case II.—This 30 year old white female, M. C., was admitted to the hospital on January 17, 1949. It was difficult to obtain a history but apparently she had been "nervous" for a number of years and had been taking various medications because of this. She also had a history of severe frontal headaches, and her husband stated that she had been emotionally upset prior to admission and "cried all of the time."

Physical examination revealed an uncooperative female who became angrier as each additional question was asked by the examining physician. The skin and mucous membranes appeared slightly cyanotic. The remainder of the examination was negative.

Laboratory findings: The hemoglobin was 70 per cent, red blood count 3.4 million, total leukocyte count was 6,600 with a normal differential. The urine showed a few pus cells in the sediment but otherwise was not abnormal. The Kline reaction was negative. The blood bromides were elevated to 200 mg. per cent.

Course: She was treated with sodium chloride, grams 3 four times a day, and given intravenous fluids. Six days after admission her personality changed completely and by discharge she had become very cooperative but continued to be "nervous." She was discharged on sodium chloride, grams 3 three times a day, and phenobarbital. Follow-up examination on February 2, 1949, found her much improved but still complaining of headache, and at this time she was advised to discontinue the sodium chloride. On February 15, patient's bromide level was less than 75 mg.

This patient was probably given bromides by her physician who did not think that she would continue taking the drug, or did not realize its toxicity. Here with treatment and the discontinuance of the drug, a complete reversion to a normal personality was seen to occur within a few days.

Case IV—D. H., a 52 year old man, was admitted in a semi-comatose condition on July 7, 1948, and the history was obtained from his wife. She stated that he had consumed large quantities of alcohol for a number of years. Two months prior to admission he developed nausea, vomiting, and abdominal pain and was hospitalized at another hospital. He was irrational during most of his stay there and after one month was discharged. Since that time, he had continued to be irrational at intervals. He also had had frequent headaches, and three days before admission to our hospital had had a severe headache and a definite chill.

Physical examination: The patient was malnourished and semi-comatose. The temperature was 99.8 degrees F. The skin and mucous membranes were very dry. Examination of the fundi revealed the discs to be hyperemic with definite haziness of both nasal borders. The left ear drum was hyperemic and retracted. The tongue was coated. Crackling rales were heard in both lung bases. The patient was also incontinent.

Laboratory findings: Two days after admission the hemoglobin was 80 per cent, red count 3.99 million, and total white count 6,950 with a normal differential. The urinalysis showed one plus albumin, four plus sugar, 25-30 red blood cells, and 15-20 pus cells. (This was after a retention catheter had been inserted and the patient had received intravenous glucose.) The blood urea-nitrogen was 11 mg. per cent. Examination of the spinal fluid revealed it to be clear and the pressure was normal. The globulin was increased but the microscopic examination was negative. X-ray of the skull was negative, and x-ray of the chest showed a moderate amount of infiltration of the perihilar regions.

Course: On admission the impressions were (1) meningitis, (2) cervical spine lesion, (3) cerebral neoplasm, (4) diabetes mellitus, and (5) delirium tremens. The patient was started on intravenous fluid containing vitamins B and C and penicillin every three hours. On July 13, the possibility of bromism was discussed and a bromide determination at this time revealed the level to be 250 mg. He was given 2 enteric-coated sodium chloride tablets four times a day and fluids were forced. By July 16, he was still irrational although he had begun to take food by mouth at times. On the 19th, the patient was able to sit in a chair and walked with difficulty. His sensorium had begun to clear at this time. On July 20, the bromide level was 175 mg. per cent, and by July 22 he was very cooperative and was able to dress himself. At this time he knew his age, home

address, and former occupation. By the 24th, he was rational and the bromide level was 100 mg. He was discharged 21 days after admission at which time he seemed well oriented, but his speech was somewhat hesitant and he had some difficulty in remembering past events. He was last seen one month after discharge when he appeared to be in good health. His bromide level was less than 75 mg. at that time, and his urinalysis was normal.

This case illustrates the difficulty in making a diagnosis. The patient had been in another hospital for one month and had not been diagnosed. When seen in our hospital, it was a week before a diagnosis of bromism was considered because of the similarity of the signs to those that might be found in delirium tremens, meningitis, and brain tumor. This man was a known alcoholic, and it was later learned that his physician had been treating him with bromides. Unfortunately, he had continued taking the drug for some time, ending up in the hospital.

Case V.—This 59 year old white female, B. G., was admitted to the hospital on March 30 and discharged on April 10, 1947. Her history was difficult to obtain as she was confused on admission. She stated that she had had "pains all over my body" and generalized weakness for several months. She had always been nervous, but had become increasingly so during the six months prior to admission. During her hospitalization, it developed that she had been taking large quantities of "Bromo-Seltzer."

Physical examination revealed an apathetic, confused, white female who complained of inability to move except with the greatest effort because of weakness. The strength in her hands was fairly good and she was able to flex and extend her knees and ankles. On pelvic examination, the perineum was markedly lacerated and the rectal sphincter was badly torn in the anterior portion. The remainder of the physical examination was essentially negative.

Laboratory studies showed the hemoglobin to be 90 per cent, and the white count was 5,800 with a normal differential. The Kline reaction was negative and urinalysis was normal. Electrocardiogram was within normal limits.

Course: This patient was confused at times during her hospitalization and was very difficult to control. There were times when she talked continuously and incoherently. Blood was drawn a few days after admission and sent to another laboratory for bromide analysis. The report was received the day before the patient was discharged and was 300 mg. The patient left the hospital, and the family physician was advised to administer sodium chloride and to force fluids. The patient was never seen again by us after she left the hospital.

A report from her family physician one month later indicated that her sensorium had cleared considerably, and she had become cooperative. No further bromide level was obtained. Here is a case which would probably have been labeled "psychoneurotic." She may have been taking the drug for similar complaints; but as her physician stated, she had improved with treatment.

Case XII.—A. R., a 47 year old male, was admitted to the hospital on December 23, 1948. At this time, he was irrational and uncooperative. The history was obtained from his wife. She stated that he had been a "heavy drinker" for years, had been "nervous" for some time, and had been taking medications prescribed by his local physician. Several weeks prior to admission, he had taken two bottles of "Miles' Nervine" to his wife's knowledge. He returned from work two weeks before admission at which time he complained of headache. At that time, he became confused and irrational and was seen by his local physician who treated him at home with "bromides" for one week. During that time, he complained of headache on various occasions. At the end of that time, he was taken to a local hospital. According to a communication received after the patient's death, the doctors at the local hospital thought that the patient had a brain tumor, abscess, cerebral hemorrhage, or encephalitis. For five days he received penicillin and intravenous fluids without improvement. After this, he was sent to our hospital.

Physical examination revealed a well-developed and well-nourished male lying in bed; semi-stuporous, disoriented, cooperative but slow to respond. The tongue was thickly coated, the pupils were pinpoint, and the reflexes were hyperactive. Otherwise, the remainder of the physical examination was essentially negative.

Laboratory findings: On December 24, the day following admission, the hemoglobin was 84 per cent, the leukocyte count 10,250, with a normal differential. The Kline reaction was negative and the urinalysis was normal. The blood bromide was reported as being more than 300 mg. per cent on the day of

admission. Spinal fluid examination done at the other hospital was normal.

Course: The patient had to be restrained on admission and received sodium luminal for restlessness. Fluids were forced by mouth and he received 5 per cent glucose in normal saline intravenously twice a day. However, because of his irrational condition, he required large and frequent doses of sedatives ("nembutal," paraldehyde, and sodium pentothal). On admission, his temperature was 98 degrees F. (axillary). However, the next day it was 101.6 degrees F. and was intermittent to this level for three days. It became impossible to continue intravenous fluids because of the patient's condition, and a nasal tube was passed on December 27, 1948. He then received a diet consisting of carbohydrates 300 grams, proteins 100 grams, and fats 50 grams, for each 24 hours, divided into six feedings. In addition, he received two grams of sodium chloride at each feeding and 2,000 cc. of water was added to the diet. He also received vitamins B and C intramuscularly. That night he began to have diarrhea and was given paregoric and "Kaopectate" after each loose stool. Fluids were continued and the next day he was put on sulfadiazine and penicillin. His temperature began to rise higher than 102 degrees the night the diarrhea commenced. By the next afternoon, it reached 106 degrees rectally and the patient died. Autopsy was performed but did not contribute any further information as to the cause of death.

There have been only a few cases reported in the literature of death due to bromides. Bunbury and Wagner[13] reported two cases due to indiscriminate use of bromides. Barbour[14] has also reported one death.

This death was probably due to bromism, or at least it contributed heavily to the cause of death. Since he had been in such a poor condition for some time, it may have been that the diarrhea was all that was needed to tip the scales against him.

Summary

Twelve cases of bromide intoxication, including one fatality, are reported in order to re-emphasize the danger of the use of bromides without adequate control.

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CUSHING'S SYNDROME: REPORT OF TWO CASES

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Cushing in 1932 reported twelve cases, all in young adults which revealed the following symptomatology:[1]

1. Rapidly acquired, usually painful adiposity of the face, neck, and trunk.
2. Tendency to kyphosis from an "unusual softening of the bones of the spine."
3. Sexual dystrophy, early amenorrhea in females and ultimate impotence in males.
4. Hypertrichosis of face and trunk in females and preadolescent males, and possibly the reverse in adult males.
5. Dusky, plethoric appearance of the skin and purplish striae.
6. Hypertension with a blood pressure ranging from 178/100 to 230/170.
7. Tendency to polycythemia.
8. Variable backaches, abdominal pains, fatigability and weakness.

Other features noted were acrocyanosis, ecchymosis, aching pains in the eyes, slight exophthalmus, dry skin, polyphagia, polydipsia, polyuria, edema of the lower extermities, and susceptibility to infection.

This syndrome, which now bears Cushing's name, he thought was due to the presence of a basophilic adenoma of the pituitary gland. He suggested that the over-production of gonadotropic hormone by the basophile cells might be responsible for the pathology analogous to over-production of growth hormone by the acidophile cells in acromegaly. Cushing pleaded for more pathologically verified cases, and less clinical speculation as to the etiology of the condition. Similar cases have accumulated in the literature and pathological studies have been instructive. These studies have revealed instances of basophilic adenoma, with or without adrenal adenomas. In a number of cases malignant tumors of the adrenal gland were found. In one instance an adenoma apparently arising from the pars intermedia of the hypophysis was revealed.[2] Arrhenoblastoma of the ovary[3] has also been reported as a causative factor. The English pathologist Crooke[4] reported twelve cases of Cushing's disease, in six of which pituitary adenomas occurred. In three cases there was neoplasm or hyperplasia of the adrenal cortex without pituitary adenoma. The remaining three likewise failed to show pituitary adenoma but showed neoplasm of the thymus gland as the presumed pathological basis. In addition, Crooke reported after a careful study of the pituitary glands of the twelve cases an abnormality common to all, namely a hyaline change in the basophile cells of the anterior pituitary, which was not observed in a study of 350 pituitary glands from other conditions. This he believed to be of considerable significance.

Obviously, then, the evidence at hand suggests that this syndrome is not a response to one specific type of lesion. The pathologic physiology of the disease is obscure. The behavior of the gonads is not that ordinarily associated with over-production of gonadotropic hormone. The frequent occurrence of bilateral adrenal cortical hyperplasia in basophilism does, however, suggest over-production of the cortical hormones. Certainly there is strong support for the view that the problem is in the nature of hyperadrenocorticism, whether initiated in the hypophysis or adrenals.

Evidence at hand would indicate that the adrenal cortex elaborates numerous hormones. The total number of such hormones isolated is reported to be in excess of twenty-five. Chemically, the active hormones are identified as steroids. Studies with adrenalectomized animals have confirmed biological activity of a number of these steroids, variously stated to be from six to ten.

A classification of the steroid hormones on the basis of biological activity, which corresponds with the accepted concepts of clinical activity of the adrenal cortex, has been offered.[5] Accordingly, the first group of compounds are those which regulate water and electrolyte metabolism. This is particularly significant in Addison's disease where sodium excretion, potassium retention and changes in extracellular fluids are so striking. The best example of a steroid affecting this type of metabolic disturbance is desoxycorticosterone. A second group of compounds which influence carbohydrate and protein metabolism are well recognized. The injection of

such hormones results in an increased blood sugar and liver glycogen content. This response appears to follow an acceleration of protein catabolism. Following deamination of protein, the amino acids thereby derived, may be converted into glucose. Another factor appears to be that of an inhibitory effect of the steroid upon oxidation of glucose in the tissues. Structually this group of steroids all have an oxygen atom on C 11 and are known as corticosterones. Urinary assays for these corticosterones or corticoids most likely do not indicate the quantities of the substance formed in the gland. However, varying levels of urinary corticoids probably reflect changes in the activity of the cortex. Finally, there is the third group of compounds which exhibit the properties of the sex hormones. These are the well known androgens, estrogens, and progesterone. There are also demonstrable in the urine a group of steroids which have a ketone group on the seventeenth carbon atom and a free methylene group. To these have been applied the name 17-ketosteroids. Androgenic properties are possessed by some of the 17-ketosteroids. In the male urine two-thirds of the 17-ketosteroids are believed to be derived from the adrenals, while the testes are the source of the remaining one-third. In the female urine the total content of the 17-ketosteroids is believed to be derived from the adrenal gland. Differentiation of 17-ketosteroids into Alpha and Beta fractions has been accomplished. Elevation of the Beta 17-ketosteroids has been found in carcinoma of the adrenal cortex. The exact source of the 17-ketosteroids in the adrenal is not proven; however, it is likely concerned with androgenic function and has an anabolic effect on protein metabolism.

Alteration in the amounts of the steroids secreted by the adrenal cortex, particularly in hyperfunction where there is an excessive production, seems to result in fairly typical clinical syndromes. Pathologically the chief findings in the cortex are hyperplasia which may be localized or diffuse, adenoma usually weighing from two to four ounces which exhibit a predisposition to malignant changes, and carcinoma. The carcinoma metastasize most frequently to the lungs, liver, and brain.

The adrenogenital syndrome results when there is a hypersecretion of diverse cortical steroids which are androgenic in function. The changes observed are those of masculinization. It is approximately five times more frequent in the female, and may originate in fetal life, infancy, childhood, or adult life. Intravenous pyelography or perirenal air insufflation may reveal the presence of an adrenal tumor. Urinary 17-ketosteroids are markedly increased as an expression of this increased androgenic activity.

The classic studies of Albright[6-7] indicate that another type of adrenal cortical hyperfunction is responsible for the changes observed in Cushing's syndrome. These investigators believe that there appears at puberty simultaneously with the onset of estrin in the female, and probably at the time of the onset of testosterone in the male, a steroid cortical hormone which is somatotrophic in effect, controls pubic and axillary hair, and excretion of 17-ketosteroids in the female. This he has called the nitrogen or N hormone, and its function is to stimulate anabolism. Its presence in the body extends well into the later years of life, considerably beyond the menopause in the female and to a corresponding period in the male.

At the same time there is present in the body another adrenal cortical steroid hormone which in contrast to the above inhibits anabolism. It furthermore breaks down lymphoid tissue, releasing immune globulin which inhibits hexokinase and interferes with the oxidation of sugar. This results in increased deposition of glycogen in the liver. This steroid is under the control of the adrenocorticotrophic hormone of the pituitary gland. Its structure reveals an oxygen on the eleventh carbon atom. The "11 oxycorticosteroids" determination is a quantitative measure of its presence. This hormone has been designated the adrenal cortical sugar or "S" hormone by Albright. In health these opposing "N" and "S" hormones exist in normal amounts. Excessive production of the "S" hormone in the young adult produces Cushing's syndrome. Urinary assays reveal a marked increase in the urinary corticoids. There is also an increase in the 17-ketosteroids which is described as compensatory on the part of the "N" hormone in the presence of excessive quantities of "S" hormone. Thus, it would appear that hyperfunction of the cortex with hypersecretion of androgenic substances and or "N" hormones results in the adrenogenital syndrome; whereas hyperfunction of the adrenal cortex with hypersecretion of hormones which inhibit anabolism, the corticosterones or the sugar or "S" hormone produces the clinical picture of Cushing's syndrome. Albright believes that careful pathological studies will in most instances reveal the

hyaline degeneration of the basophile cells of the pituitary gland described by Crooke. It is also interesting that in the later years of life after there has been a cessation of the sex hormones, particularly estrogen, and a decrease in the somatotrophic or "N" hormone, the unopposed action of the "S" hormone which by its inhibition of anabolism is responsible for the production of osteoporosis.

The following is a report of two cases of Cushing's syndrome.

Case I: Mrs. A. G. is a 43 year old married woman. There have been no pregnancies. The patient presented herself with chief complaint of puffiness, bloated feeling, and splotchiness.

Present Illness: Prior to November, 1945, this patient had been in excellent health, very active, energetic, and her personality was distinctly that of an extrovert. Her last normally scheduled period was in October 1945. Then five weeks later, November 17, 1945, she had her last period which was not entirely normal but not greatly abnormal. Since this time there has been no evidence of menstruation. Some two weeks after the last period she began to feel quite nervous inside and became aware of suddenly getting fat, particularly in the chest and abdomen. She comments that the abdomen became so fat that it would tremble. This was next followed by the feeling of puffiness which she states that she could definitely see. At one time the puffiness would be in the epigastrium, and at another time she would be aware of it in the chest and on occasions she has felt that her knees were puffy. When she becomes nervous she is aware of purplish mottled type of splotchiness over the body. Likewise she has experienced hot flashes following which she perspires a great deal and then gets icy cold. Since all of this has happened she has observed a marked tendency to bruise very easily, something which she had never noticed before. In a recent examination pressure of the stethoscope and the application of the tourniquet both left purplish bruised areas.

All of her life she was known to have a normal blood pressure and early in the fall of 1945 her blood pressure was low. However, during an examination in the last few days her blood pressure was found to be 250/168. She was put on a rice diet and there followed a drop of 25 points in the blood pressure, and at the same time she lost three pounds in weight. However, prior to the institution of the rice diet, from the onset of her illness in November she gained fifteen pounds in weight.

She has always known that her eyes were somewhat prominent but of late the prominence has become quite marked until they protrude and associated with this is a marked watering of the eyes.

Her general nervousness and trembling is quite disturbing. Whenever she attempts to do anything the trembling is quite marked. However, if she remains at home quietly she feels much more relaxed and the trembling is decidedly reduced.

The physician who has just examined her feels that she probably has Cushing's syndrome and she was referred to verify his opinion.

Family history is unessential except that one sister was large and was told that she had gland trouble, the exact nature of which is not known.

Physical examination reveals the patient to be 5′ 3¾″; weight 153½ lbs.; temperature 98.4.

The patient appears to be quite obese. This obesity is strikingly confined to the chest, abdomen, and neck. The extremities however do reveal some obesity proximally but the legs and forearms are of normal size or possibly somewhat small. The skin, particularly of the legs and thighs, reveals a purplish mottling. There are also numerous scattered bruises over each leg. There is increased facial trichosis which also involves the upper lip and the neck. Likewise there is trichosis in the midline of the abdomen extending up from the pubic hair. There are a few purplish striae of the lateral abdominal wall on each side; under each breast there are purpuric spots, and over the right arm there are numerous purpuric spots at the site of the pressure from the blood pressure cuff applied a few days ago. The eyes are distinctly exophthalmic. The pupils are equal and react to light and accommodation. There is slight lid lag. The fundi were essentially normal. The pharynx is injected and the tonsils are small and adherent. The teeth all appeared to be vital. There was a definite tremor of the tongue. There was no lymphadenopathy. No thyroid abnormality was detected. The chest was symmetrical, short, thick, with a wide costal angle. The lungs were clear to percussion and auscultation. Heart: Cardiac dullness extended to a point approximately 10 cm. from the mid-sternal line in the left fifth interspace. Retro-manubrial dullness was not increased. Heart sounds were of good quality without undue accen-

tuation of either second sound. There were no murmurs. Action was entirely regular. Peripheral vessel walls were not palpable. The pulse rate was 89 to the minute. Blood pressure—right arm 190/120; left arm 190/130. The abdomen was definitely protuberant with thick walls which were relaxed. The liver border was palpable about 2 finger-breadths below the costal margin on deep breathing; otherwise, no tenderness, masses, nor rigidity were detected. The spleen could not be felt. The spine was straight without tenderness or limitation. The joints of the upper and lower extremities were freely movable without evident abnormality. There were a moderate number of varicosities of the legs, more marked on the left. The reflexes were all active and equal. Pelvic examination revealed no abnormality. Laboratory studies had been done prior to the patient's reporting to me and were not repeated. They were as follows: hemoglobin 110%; sedimentation rate 4 mm. in one hour. Wassermann was negative. Non protein nitrogen 40 mgms. Urinalysis revealed a trace of albumin and a rare RBC was reported. Basal metabolic rate was minus 14%. Electrocardiogram revealed a somewhat low T wave in Lead II and inverted T wave in Lead III, with left axis deviation.

In view of the patient's amenorrhoea, rather suddenly developing obesity of the trunk (or buffalo type) which was somewhat uncomfortable, definite purpura, hypertension, hypertrichosis, exophthalmus, and, though the red blood count was not done, with the hemoglobin of 110% certainly suggesting the possibility of polycythemia, it was felt that Cushing's syndrome was a very likely possibility.

The patient entered a medical center in another city. Here the findings revealed a downward displacement of the right kidney shadow on intravenous and retrograde pyelography. On peri-renal air insufflation a mass the size of a baseball was revealed superimposed upon the upper pole of the right kidney. 17-ketosteroids were reported as 18.11 mgms. in a twenty-four hour specimen of urine and represents moderate elevation. The patient was operated on and a round tumor the size of a baseball, weighing 247 grams, was removed. The pathological diagnosis was adenocarcinoma of the adrenal cortex.

Post-operatively the patient responded remarkably well, became symptom free, the 17-ketosteroids dropped to 7.98 mgms. per twenty-four hours when she was discharged. Approximately one year later the patient appeared to be in complete remission. The blood pressure averaged 130/85. An x-ray examination of the chest, however, revealed areas of increased density compatible with pulmonary metastases, and the 17-ketosteroids had risen to 12.5 mgm. for twenty-four hours.

Case II: Mrs. J. L. K., age 37, married. Seen November 13, 1947.

Chief Complaint: Swelling of the face; nervousness for two years; watery blisters on the eyes.

Present Illness: Patient dates the onset of her present illness to approximately two years ago. At this time she reports that she would wake in the morning and observe that there was a swelling and flushing of the forehead, face, and the scalp, accompanied by increased lacrimation of the eyes. Also there would appear on the white part of the eyes what looked like small water blisters. These symptoms would persist for a good part of the day but would gradually disappear as the day progressed. She thought that whenever she would rest the symptoms would promptly disappear. With the swelling there has been no itching but at times she would experience a burning and tingling. With the onset of these symptoms she has become quite nervous and she has also observed that the swelling is gradually increasing until now it involves her face and neck as well, and it is more constant. Likewise, she has observed that she seems to be getting fuller in her trunk while her arms and legs are spared. There is likewise some increase in the prominence of her eyes. She has been impressed by an increased tendency to bruise and now the slightest blow will leave large purple spots over her body. She has always had irregular menstrual periods. During this time they have decreased in frequency and in this year there have been only two periods, one in June and one in August. In all of this time she has gradually felt worse. She has worried a great deal about the fullness and her general appearance. She has seen many doctors and the diagnosis has been invariably either the menopause or an allergy. Her father was an asthmatic and she occasionally has a little wheezing. She was studied from an allergic point of view but no conclusions were reached. Subsequently she was studied at another clinic and after exhaustive studies, including a very strict elimination diet, she felt no better. On many occasions she

has taken hormones and it is her belief that they have given her the only relief she has had.

Family history is unessential. Patient has had no serious illness other than jaundice in 1932 or '33.

General physical examination revealed her height to be 4′ 9¾″; weight 110; temperature 97.6. The patient does not give the impression of being obese. However, the head, neck, and trunk do seem to be somewhat out of proportion. The extremities are small. The skin generally was dry with moist palms. There was a distinct flushing of the face and neck. There were numerous superficial dilated capillaries across each cheek and the bridge of the nose. The eyes were distinctly prominent with slight puffiness of the upper lids. There was increased lacrimation and at the lateral margin of the right sclera there was what appeared to be a very small bleb. There was some slight facial hypertrichosis and a mild hypertrichosis of the trunk, particularly of the back. The eyes reacted normally and the fundi were within normal limits. The ears, nose, and throat were negative. The teeth all appeared to be vital. There was no lymphadenopathy. The thyroid appeared to be normal. The chest was symmetrical. The lungs revealed an occasional sibilant rale. The heart was not enlarged. There was a systolic blow over the pulmonic area. The rate was 86. Vessel walls were not thickened. Blood pressure right arm was 168/100; left arm 164/100; popliteal pressure 210/140. The tourniquet test was within normal limits. No abnormalities were detected in the abdomen. The joints were entirely normal, freely movable. Pelvic examination failed to reveal any abnormality. Laboratory studies revealed hemoglobin 101%; red blood count 5,240,000; white blood count 15,000; with 76% polys. Blood platelets were normal. The sedimentation rate was 2 mm. in one hour. The urine revealed a specific gravity of 1.010; there was a trace of albumin; otherwise, the urine was negative. The stool was negative for occult blood. The Wassermann reaction was negative. The glucose tolerance test revealed fasting blood sugar 87 mgms.; after one hour 224 mgms.; after two hours 156 mgms. Intravenous pyelogram was normal. There was nothing to indicate any pressure on the kidney from the adrenal gland. X-ray of the skull showed the sella turcica to be of normal size and contour. The bones of the skull appeared to be normal, also those of the lumbar spine and the pelvis. On X-ray the liver shadow appeared to be somewhat enlarged.

This patient also revealed a tendency toward obesity of the trunk with normal extremities, hypertension, slight hypertrichosis, exophthalmus, suggestive tendency to polycythemia, and a disturbed glucose tolerance which was definitely of the diabetic type. These symptoms strongly suggested the possibility of an endocrine problem and the idea of Cushing's syndrome was entertained. She was admitted to a nearby medical center for study.

A very comprehensive work-up which in general substantiated our preliminary studies was done. Complete blood chemistry studies were done and were normal. Of interest for this discussion is the study of the urinary 17-ketosteroids which were reported as 32.64 mgms. for twenty-four hours. This represents a distinct increase. The normal range of 17-ketosteroids is from 4 to 14 mgms. per twenty-four hours. Study of the urinary gonadotropins revealed an activity of less than two rat uterine units per twenty-four hours and are against any hyperactivity of the pituitary. The elevated 17-ketosteroids, however, are in line with a diagnosis of Cushing's disease. The normal range for Beta ketosteroids was given as 0.1 to 1.9 mgms. per twenty-four hours, and a value of 6.2 mgms. reported in this patient represents a significant increase. It is the impression of some workers that this finding is indicative of carcinoma of the adrenal cortex. An exploratory laparotomy was advised. The patient was operated on on the 13th of April, 1948. The left adrenal appeared to be normal. The right adrenal gland revealed a large vascular tumor about three inches in diameter. This tumor was enucleated and apparently totally removed. The patient had a rather stormy convalescence post-operatively but finally rallied and appeared to be doing nicely when she died suddenly. No cause for death could be demonstrated at autopsy. Pathological report on the adrenal tumor revealed a carcinoma (adenoma malignum).

SUMMARY

Originally Cushing's syndrome was believed to be due to a basophilic adenoma of the pituitary gland. Subsequent case reports and investigations have demonstrated involvement of the adrenal cortex by hyperplasia, adenoma, or carcinoma. Whether of pituitary or adrenal cortical primacy, this clinical picture is so striking, the designation Cushing's syn-

drome appears justified in each instance.

Recent studies indicate that Cushing's syndrome is produced by hyperfunction of the adrenal cortex with excessive secretion of that hormone with an oxygen on the eleventh carbon atom, 11-oxycorticosteroid. This steroid inhibits anabolism with disturbance of protein and sugar metabolism. Urinary corticoids are markedly elevated and there is a compensatory elevation of 17-ketosteroids. Careful pathological studies, it is believed, will in most instances reveal hyaline changes in the basophil cells of the pituitary gland.

Two cases of Cushing's syndrome are presented. In each instance an adrenal cortical tumor was found at operation which pathological examination revealed to be carcinoma.

One patient experienced a complete remission of symptoms but subsequently developed pulmonary metastasis. The second patient died suddenly of unexplained cause post-operatively.

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1100 Church Street.

Find Blood Test for Cancer Not Suitable for Diagnosis at Present.

The Huggins-Miller-Jensen blood test for cancer does not appear suitable at present as a diagnostic test, in the opinion of two researchers from the Department of Experimental Pathology, Quincy (Mass.) City Hospital. The test, based on albumin disturbance in cancer patients, was first reported about a year ago by Dr. Charles B. Huggins of the University of Chicago.

The diagnostic value of the procedure followed by Dr. Huggins and his co-workers was tested by Dr. Otakar J. Pollak and Adeline Leonard, B.S. Their report on test results from blood serums from 80 patients with proved malignant growth and on control serums from 170 patients appears in the March 25, J.A.M.A.

In seven of the 80 patients with proved malignant growth, the test failed to indicate the presence of cancer. In 23 of the 170 persons in whom malignant growth was excluded on the basis of clinical signs and laboratory and x-ray study, the test indicated malignancy. The total number of false reactions in the series of 250 persons was 30 (12 per cent).

"At the present time, this reaction is not suitable as a diagnostic test," the researchers point out. "Further investigation might bring about the development of a reaction the result of which would show better correlation with disease."

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: B-63005

This 62 year old, white, unmarried female entered the hospital in a confused state. According to the family the patient had been markedly depressed since the death of her mother two years previously. Her depression was marked and during the past few weeks had become even more severe. For the past two weeks the patient had stated that upon awakening she was confused both in the morning and following her afternoon nap. This confused state cleared in approximately an hour. Ten days before admission the patient had a severe dizzy spell upon awakening; however, she did not faint or fall. The night of admission the patient was feeling well and was preparing to take a trip. Just prior to leaving, she collapsed while in the bathroom. She was seen shortly thereafter by the ambulance physician, who described her as being quite confused, cold, and covered with perspiration. The blood pressure was 100/60. The confusion cleared somewhat upon being brought to the Emergency Room and the blood pressure returned to 120/85. The patient had been taking questionable amounts of bromides for her nervousness and depression for an unknown length of time.

Physical Examination: Pulse 88, respirations 18, blood pressure 120/85, temperature 98.6° orally. The patient appeared to be a fairly well developed, thin, elderly, white female in a partially confused state and extremely hard of hearing. Examination: skin normal; lymph nodes not enlarged; pupils reacted to light and accommodation. There was a left sub-conjunctival hemorrhage and periorbital contusion. Fundoscopic revealed grade III arteriosclerosis, hard exudates, A-V nicking, narrowed vessels, occasional punctate hemorrhages. There was a hematoma of the left lid. The nose was normal. Mouth and pharynx were normal. The protruded tongue was in the midline. The neck was supple, no stiffness, trachea was in the midline, no venous distention. Respiratory movements were symmetrical. Lungs were clear to auscultation and percussion. Heart: Apex beat was in the 6th intercostal space, 1 cm. beyond the midclavicular line. There was a soft apical systolic murmur, no thrills noted. The rate was 88, the rhythm was regular. Abdomen: Poor relaxation. Liver was palpated 2-4 cm. below the costal margin. The kidney and spleen were not palpable. There were no herniae or masses present. Pelvic examination revealed intact hymen. The genitalia were normal. Rectal examination revealed normal sphincter tone, no tenderness, no evidence of fresh or old blood on the examining finger. Neurological: Abdominal reflexes were absent. All other reflexes were equal and active. Cranial nerves were intact. Objective sensory findings were normal. No pathological reflexes elicited.

Urinalysis: Clear, acid, specific gravity 1.008, negative for albumin, sugar and acetone. There were no pus cells or red cells in the sediment. No casts were seen. Blood count: RBC 4,360,000, hemoglobin 14.5 grams, white count 8,300, 80% polys, 15% lymphs and 5% monos. On smear platelets appeared adequate. Lumbar puncture showed the initial pressure to be 220 mm. and final pressure at 176. Fluid was clear. Spinal fluid protein was reported at 86 mgm.%, mastic 00000. Spinal fluid Wassermann was negative. Spinal fluid sugar was 74 mgm.% and the spinal fluid cell count was 2 lymphs. Blood bromide level showed only a trace present. The NPN was 43 and blood sugar was 121 mgm.%. Electrocardiogram made on admission was not diagnostic. Chest x-ray reported lungs clear except for apical pleural thickening on left. There were sclerotic plaques in the aortic knob. There was mid dorsal scoliosis with convexity to the right. No fractures of rib noted. Skull plate normal, no fracture.

The patient was admitted to the hospital at 1:00 A.M. and slept throughout the night with no complaints, blood pressure remained stable, temperature normal. The following morning the patient's sensorium had cleared and she added the fact that preceding the onset of fainting there was a "crush-

ing" severe type of substernal pain. However, she does not recall having had similar pain or was there any radiation of the pain. The patient's temperature remained normal during the morning of her first hospital day, she ate a small amount of food and stated that she was feeling better. During the afternoon of the first day the temperature began to rise and reached the level of 100.8° orally. There was no complaint of pain or confusion and the night was spent in comfort. The patient slept fairly well.

At 7:00 A.M. on the morning of the third hospital day the nurse was called, for the patient was having a convulsion. The nursing notes state the patient was cyanotic, face was twitching and respirations were poor. The patient died within five minutes after onset of the convulsion.

Discussed by Dr. William H. Higgins, Jr.*

The pertinent features of this protocol can be summarized as follows: The case is that of a 62 year old white single woman about whose past history little is known. For two years prior to admission to the hospital she had been depressed following the death of her mother. Her family had noted that she was becoming increasingly confused, especially in the morning on awakening and in the afternoon on waking up from the afternoon nap. She apparently had been a nervous woman for it was known that she had been taking bromides.

The patient apparently had been getting along fairly well until the day of admission when she collapsed in her bathroom. An ambulance was called and the ambulance doctor found her to be confused, her blood pressure 100-60, and she was cold and covered with perspiration. She was brought to the hospital and on arrival was still confused and bruises about her head and eyes and conjunctival hemorrhages were found. Positive physical findings included a grade III arteriosclerosis of the vessels of her eye grounds, hard exudates, a few hemorrhages, A-V nicking, and narrowed vessels. Her heart was slightly enlarged by physical examination, the rhythm was regular, the rate 88. A soft apical systolic murmur was heard. Blood pressure was later found to be 120-85. The lungs were clear. The abdomen was negative except for a slightly enlarged liver which was not tender. A thorough neurological examination was done which was entirely negative except for some mental confusion. The neck was not stiff. The laboratory studies were not remarkable. The blood and urine examinations were negative. The blood sugar 121 and the NPN 43. A lumbar puncture was done. No cells were found in the fluid, the spinal fluid protein was slightly elevated, and the pressure was 200 mm of water. An electrocardiogram done on admission was "Non diagnostic". No mention was made of the T Waves, A-V conduction time or axis deviation. The X-rays showed no fractures and only arteriosclerotic plaques in the aorta were seen.

While in the hospital the patient recalled a "crushing" substernal pain which was nonradiating before fainting prior to entry to the hospital. Her course was uneventful and she had no apparent specific treatment. Her temperature rose to 100.8 and otherwise her convalescence was negative. On the third day she had a sudden convulsion, became cyanotic, dyspneic and died.

This protocol can be further summarized as being about a sudden and unexpected death of a 62 year old woman whose main symptoms were mental confusion and syncope and whose positive physical finding was marked arteriosclerosis.

It is fairly definite that this patient had a marked generalized arteriosclerosis. This is brought out by the eye ground changes and the condition of the aorta as seen by X-ray. No comment is made of the condition of the brachial vessels or the pedal pulses. It would be interesting to know about these vessels since they frequently are good indices of the condition of the peripheral blood vessels, especially in arteriosclerosis.

Hypertensive vascular disease is suggested by the finding of the eye grounds and the enlarged heart. However, a persistently low blood pressure, and no mention of left axis deviation or left ventricular strain on the electrocardiogram, and an essentially negative urine all point away from this possibility. The likelihood of a preexisting hypertension will be discussed later.

Only to mention in passing is a disease which is suggested by the eye grounds. In diabetes retinal changes sometimes occur which simulate those found in this patient. Diabetes, however, would in no way explain this patient's clinical picture and this together with the normal blood sugar and negative urine ruled this out.

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More difficult to rule out than hypertension or diabetes are lesions of the brain. The first of these would be a brain injury occurring in the fall with subsequent damage to the brain or a subdural hematoma. These lesions are always difficult to diagnose, however, in this case the X-rays of the skull were negative, the neurological examination was entirely negative for a localized lesion, the patient had no headache, there was no choking of the discs and the spinal fluid was not remarkable.

A brain tumor also seems unlikely in view of the absence of localizing signs, choking of discs, and the sudden terminal convulsion and death. As a rule a brain tumor would be preceded by signs or at any rate coma prior to death.

Subarachnoid hemorrhage must be ruled out in this case. The causes for this disease are many but as a rule they follow the rupture of a congenital aneurysm usually at the Circle of Willis. Hemorrhage from these aneurysms usually occurs in the 3rd or 4th decade and rarely as late as the 6th decade. However, in patients of this age, frequently the cerebral vessels are weakened by arteriosclerotic changes or atheromatous changes which occur in the blood vessels and often hemorrhages may result. Further causes for weakening and later hemorrhage of the cerebral blood vessels would include syphilis, embolic processes, trauma, and certain acute infectious diseases which would include typhoid fever. The clinical picture of subarachnoid hemorrhage is almost invariably headache and dizziness. Eventually these patients become comatosed and almost always their spinal fluid is bloody and they show neurological signs of one type or another. The patient under discussion today, of course, did not have neurological signs or blood in the spinal fluid and her death was sudden without coma. I believe that these would be sufficient to rule out the possibility of subarachnoid hemorrhage.

Cerebral thrombosis should always be considered in any elderly patient who is showing senile changes and finally dies. These people as a rule have localizing signs of one type or another and rarely is their death sudden. The typical onset of a cerebral thrombosis is a gradually occurring weakness of one or more groups of muscles followed usually by reflex changes. The clinical course of this patient seemed to eliminate this possibility.

Cerebral hemorrhage is a good possibility here. Apoplectic strokes notoriously occur suddenly and are frequently associated by a fainting episode or coma. It is common in hypertension and in people with marked arteriosclerosis but is usually associated with convulsions and/or long periods of coma. Bloody spinal fluid and an elevation of the spinal fluid pressure frequently occur although this is not necessary. It would be unlikely for a massive cerebral hemorrhage to occur without localizing signs neurologically or coma.

One final cerebral lesion which would explain in part but not entirely some of the patient's symptoms would be lesions limited to the small blood vessels of the brain. Dr. Walter Alvarez, of the Mayo Clinic, and others have emphasized the frequent occurrence of minute cerebral apoplexies occurring in the cerebral cortex. These small "strokes" are commonly found in elderly people who have prior to death shown sudden personality changes which include irritability, confusion, etc. Frequently these small cerebral hemorrhages are preceded by episodes known as angiospasms which are spastic seizures of the small cerebral vessels. Clinically these people seem to have transient hemiplegias, or in the less severe cases transient episodes of marked confusion or weakness of one or more sets of muscles. Almost invariably after one to twenty-four hours the symptoms entirely subside and the patient is apparently well. These spasms of the small cerebral vessels, however, are frequently associated with localized areas of ischemia which eventually become small degenerative areas which are scattered throughout the brain. A small minute cerebral hemorrhage is frequently found associated with these areas of softening.

Lesions of the heart should next be considered as an explanation for this patient's disease and death. The Stokes-Adams seizure sometimes occurs in elderly arteriosclerotic people. In this condition there is a severe preexisting degenerative disease of the heart such as coronary arteriosclerosis, rheumatic heart disease or syphilitic involvement of the mouth of the coronary. It is usually associated with bradycardia, and manifested by sudden dizzy spells, convulsions, faintness, etc. These people always have the electrocardiographic changes of prolonged A-V conduction time. Occasionally sudden death occurs from cardiac standstill or ventricular fibrillation. This patient, however, had no evidence of brady-

cardia and we are told that the electrocardiogram showed no changes and we can assume that there was no prolongation of the conduction time.

Aortic stenosis sometimes causes sudden unexplained death. There is no evidence in this case for a preexisting rheumatic heart disease which is the usual cause of aortic stenosis, however, in marked arteriosclerosis the so-called Mönckeberg's sclerosis does occur and a stenosis of the aortic valve follows. There was no evidence, however, by physical examination nor was the blood pressure compatible with aortic stenosis in this case.

Myocardial infarction is an excellent possibility. We recall that the patient has a crushing substernal pain prior to entry to the hospital which was followed by fever. This characterically occurs in many cases of coronary occlusion and death in this case could have followed a new infarct. The patient could also have had an elevated blood pressure which fell following the infarction. This is not at all uncommon and frequently the blood pressure may remain low indefinitely although in the usual case the blood pressure tends to climb gradually several days to a week following the infarction. The majority of cases with coronary occlusion will show electrocardiographic changes, especially if the occlusion is severe enough to cause death. Here we have no evidence of any such change although this does not rule out the possibility nor does it make impossible the occurrence of a second occlusion which caused the terminal event. No mention is made of any arrhythmia which often occurs in severe coronary occlusion. It is also mentioned that the lungs were clear, which one would not expect had the patient had hypertension and a sudden drop of blood pressure because of the infarction. Usually some degree of shock occurs which would, of course, be manifested in part by rales at the lung bases.

The most significant statement in the protocol, I believe, is the final sentence which states that "the patient died within five minutes after the onset of the convulsion". The exact nature of the convulsion was not described and could well have been a terminal spasm rather than a marked severe convulsion such as is seen in epilepsy.

In reviewing the causes of certain deaths which could be applied in this case only one I believe could be a traumatic type. Subdural hematoma would be the only possibility but it would be extraordinarily rare for anyone to have death this suddenly from this cause.

Nontraumatic causes of sudden death possible in this case are also very few. The hemorrhages of the brain such as a hemorrhage into one of the ventricles or a rupture of a vessel at the Circle of Willis almost always result in a deep coma for several hours prior to death. Pulmonary embolism could occur but there is no source known here for the embolus unless it could have come from a mural thrombus. Mural thrombi do not usually occur so soon after infarction and usually presuppose a large or massive infarction for which we have no evidence here. Aortic stenosis may also cause sudden death but it has been ruled out. Ventricular fibrillation or cardiac standstill is usually preceded by some arrhythmia or evidence of heart damage. Rupture of the heart is unlikely here because again there is no evidence of preexisting heart damage. Coronary occlusion, notoriously a cause for sudden death, is an excellent possibility and has already been discussed. Finally, defecting aneurysm as the cause of sudden death is to be considered. Aneurysms of the aorta are usually luetic in origin or are arteriosclerotic. Syphilis has been ruled out but the arteriosclerotic type is an excellent possibility. Those patients usually have a severe pain in the chest which may occur just prior to death or at any interval weeks or months before death which would indicate a partial dissection. As a rule hypertension also accompanies this condition but there are many cases on record which show that following dissection of the aneurysm the blood pressure in the upper extremities drops to normal or even in dissection of the abdominal aorta the blood pressure in the lower extremities may be markedly diminished or disappear entirely. It would be interesting and significant to know in this case that the pulses were present and equal in all four extremities.

In view of the history in this case of a severe crushing type pain substernally, the absence of findings other than those of arteriosclerosis and essentially negative neurological and cardiac findings, and the suddenness of the terminal onset with death following so quickly it seems most likely to me that this patient had a dissecting aneurysm which dissected several days before entry giving her the initial pain and finally at the time of death ruptured with rapid fatal exanguinating hemorrhage.

In summary then I believe that this patient had a

marked generalized arteriosclerosis, cerebral arteriosclerosis, with possible multiple areas of softening throughout the cerebral cortex and possibly hemorrhages of small cerebral arteries as described by Alvarez. The cerebral cortex will probably show some atrophy. Her death was probably due to a dissecting aneurysm which finally ruptured.

Hospital diagnosis: (1) Dissecting aneurysm.
(2) Generalized arteriosclerosis.

Dr. Higgins' diagnosis: Dissecting aneurysm.

PATHOLOGICAL REPORT: DR. THOMAS M. SCOTTI.*

On opening the thorax about 200 cc. of bloody fluid were noted in each pleural cavity and over 150 cc. of blood in the pericardial sac. The heart weighed 400 gms. The left ventricular wall was hypertrophied, measuring 2 cm. in thickness. The right ventricle measured 0.3 cm. in thickness. There was no valvular disease and the coronary arteries showed moderate atherosclerosis.

The aorta disclosed moderate atherosclerotic change but atheromatous plaques were inconspicious in ascending portion. At a point 4 cm. above the aortic valve there was a somewhat oblique tear in the intima of the anterior wall in the aorta. It was 3 cm. long and was not associated with an atheromatous plaque. The tear extended into the media. There was dissection of the media, along the junction of its outer and middle thirds, which involved the entire circumference of the aorta. This dissection extended downward toward the base of the heart and upward to the mid-portion of the arch of the aorta, involving the innominate artery as far as its bifurcation and from there it extended into the right common carotid artery. There was a considerable amount of freshly clotted blood in the medial dissection. The blood extended into the adventitial layer at the level of the intimal tear producing an extensive hematoma which extended into the subepicardial fibro-adipose tissue overlying both atria of the heart and into the mediastinum, even surrounding the pulmonary arteries and bronchi. In one area overlying the right atrium there was a small defect of the epicardium which was the probable site of escape of blood into the pericardial sac.

Microscopically, sections of aorta and innominate artery showed the dissection of the media by blood. In addition, there were irregular defects of

Heart and Aorta. The aorta was opened anteriorly just to the right of the intimal tear which is clearly visualized near the cut edge. The medial dissection is seen best along the right edge of the aorta especially in portions viewed obliquely. Atherosclerotic plaques are more prominent in distal part of arch and descending portion of aorta. Left ventricle is hypertrophied.

the media characterized by increase in the size of spaces between fibers which were filled with a pale, basophilic, fluid-like substance. There were also areas of fraying of elastic fibers and absence of fibers in other places.

Other findings were: Nephrosclerosis, cerebral atherosclerosis, areas of encephalomalacia with reparative cellular reaction involving the left occipital pole and the tip of the left temporal lobe, and mild chronic passive congestion of the liver.

Pathological diagnoses:

Dissecting aneurysm of aorta (ascending and arch).

a) extension into innominate and right common carotid arteries.
b) primary tear in ascending aorta.
c) external rupture producing adventitial hematoma extending
   1) into subepicardial tissues of base of heart leading to hemopericardium (over 150 cc.).
   2) into mediastinum and subsequently bilateral hemothorax (200 cc. each side).

Medial necrosis of aorta.

Myocardial hypertrophy, left ventricular.

Nephrosclerosis.

Atherosclerosis: aorta, coronary and cerebral arteries.

Chronic passive congestion of liver, mild.

Encephalomalacia, focal, left occipital and temporal lobes.

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PUBLIC HEALTH

L. J. Roper, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Disease Control of the State Department of Health for June 1950 as compared with the same month in 1949 and for the period of January through June 1950 as compared with the same period in 1949, is as follows:

	June 1950	June 1949	Jan.-June 1950	Jan.-June 1949
Typhoid and paratyphoid	1	10	29	42
Diarrhea and dysentery	208	231	1,595	1,511
Measles	486	1,646	2,024	20,473
Scarlet fever	51	43	556	400
Diphtheria	10	11	93	72
Poliomyelitis	4	1	19	11
Meningitis	11	6	80	52
Brucellosis	5	4	31	30
Rocky Mountain spotted fever	13	19	17	30
Tularemia	0	5	18	13

Findings of Blood Tests as Required by Virginia Premarital Law

The Virginia Premarital Examination Law went into effect on February 28, 1940. Its provisions required, among other things, that a serologic test be taken on all persons applying for a license to marry. It further required that a second serologic test and complete physical examination be performed on all individuals whose initial test indicated that there was a possibility of syphilitic infection.

A recent review of the statistical reports prepared in connection with this law reveals a number of interesting facts. From the date of the passage of the law, through the month of June 1949, 685,044 persons have been tested. Of these, 28,456 persons showed positive blood tests. Therefore 4.6 per cent of the persons tested in connection with application for marriage had positive findings; 526,661 (76.9%) of the applicants were white and 158,383 (23.1%) were non-white. The rate of positive findings among white persons tested was 0.8 per cent; among non-whites it was 15.4 per cent.

The per annum rate of persons with positive findings reached its peak in the war years, totalling 5.6 per cent in the year 1944. There has been a steady decline in the annual rate to the latest figure of 2.9 per cent in 1949. This constitutes a reduction from the peak year to the present year of 48.3 per cent. There has been no significant difference in the trend for whites and non-whites.

Of the total persons tested, 73.6 per cent have been residents of Virginia and 26.4 per cent have been non-residents. The rate for Virginia residents has been consistently higher than the rate for non-residents applying for marriage in the State. This is true equally for whites and non-whites.

In conclusion it may be said that the Virginia Premarital Law has been a good device for finding cases of syphilis, although its effectiveness in this field has been declining. Furthermore, it may be said that this law has provided an excellent source of material which can be used as an indicator for measuring the amount of syphilis existing in one given segment of the population, namely, those persons applying for license to marry.

Increase of 2,266 in Physician Population for 1949.

The net increase in the number of physicians in the United States and its territories and possessions in 1949 was 2,266, according to the 48th Annual Medical Licensure Report of the American Medical Association's Council on Medical Education and Hospitals. (June 3, J.A.M.A.)

These official figures indicate that last year 5,866 physicians were licensed for the first time, and thus represent the gross additions to the profession for that year. In 1949 there were 3,600 deaths of physicians reported to the offices of the American Medical Association.

MEDICAL SOCIETY OF VIRGINIA

MEDICAL SERVICE COMMITTEE

Medicine in Industry and Its Influence on Medical Care.

The term Industrial Medicine is given many different definitions by physicians and others associated with the practice of medicine. The most common error is to apply the term to medicine as practiced in the coal fields. This is more properly designated "Contract Practice". This type of practice includes only a few of the problems involved in occupational medicine.

The treatment of burns and traumatic injuries are considered by others as the scope of Industrial Medicine. These problems occupy only a small portion of the time of a well-rounded medical program in most large industries. Any industry which requires the full time services of a surgeon is in need of a program of accident prevention.

Occupational medicine is the preferable title for that branch of medicine which has for its purpose the prevention of illness incident to occupations and the improvement of the health status of individuals in industry.

Occupational medicine properly begins with the employment of the individuals. A complete physical examination including urinalysis, indicated blood studies, and a chest x-ray assist in properly placing the new employee. Thus, individuals with hypertension or cardiac lesion will not be assigned to laborious tasks. An annual examination, similar to the pre-placement one, assists the employee in maintaining good health and directly affects the incidence of absenteeism.

Properly designed periodic examinations that will detect the earliest manifestations of toxic substances are a necessity in industries using toxic materials. The frequency of such examinations depends on the nature of the toxic substance to which the employees are exposed. Carelessness in this phase of industrial medicine reflects itself in illness specific for the industry. A good industrial hygiene program is essential for the success of the medical efforts to prevent illness.

Facilities for the treatment of minor illness and injuries may prevent serious illness from situations in which individuals often practice self-treatment. Thus, occupational medicine is largely preventive in its scope and its problems and practice lie principally in the field of internal medicine.

As has been previously indicated, participation by the physician in industry in a good industrial hygiene program is essential. This includes not only the precautions against toxic materials but careful supervision of all cafeteria facilities, ventilation, drinking water, shower and locker rooms, and toilet facilities. This type of program should make employees more health conscious and increase their desire for early medical care. In order to facilitate such care, a program designed for this purpose is important. Industry has many and varied programs for assisting in such matters. Group insurance, continuation of wages and many similar programs are in force. One of the most important of these is hospital care. Inability to meet the financial demand of adequate medical care may superimpose emotional illness. The minimum program in this field should be to encourage enlistment in some type of hospital plan—either Blue Cross and Blue Shield or some plan which provides similar benefits. Such efforts on the part of industry cannot help but elevate the health standards of the community and assist in solving the great problem of medical care.

C. L. SAVAGE, M.D.,
Waynesboro, Virginia

MENTAL HEALTH

Joseph E. Barrett, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Child Guidance Clinics.

Special clinics caring for children with emotional problems have been in existence in this country since 1909. At that time, Healy founded the Chicago Juvenile Psychopathic Institute (now known as the Institute for Juvenile Research). He made use of the professional services of the psychiatrist, the clinical psychologist and the psychiatric social worker in attacking the problems of children. Southard, at the Boston Psychopathic Hospital which was started in 1912, introduced the term "clinical team" to describe the collaborative activities of these professional groups. The term, "child guidance clinic", was coined in 1922 and was used by the Division on the Prevention of Delinquency of the National Committee for Mental Hygiene in demonstration clinics supported financially by the Commonwealth Fund.

The initial emphasis was on the prevention of delinquency but later the goals were (a) adequate and correct diagnosis, (b) manipulation of the environment in terms of the needs of the child and lastly, the treating of the child in his usual environments.

At present there are three child guidance clinics in our Virginia system. The Memorial Guidance Clinic in Richmond has recently celebrated its twenty-fifth anniversary. The Children's Service Center of Charlottesville and Albemarle County was begun in 1947, while the Fairfax County Child Guidance Center at Falls Church has been opened more recently.

In these, as in other child guidance clinics, the focus is on the child and on his problems. Children are referred to these clinics who show such symptoms as feeding disturbances, tantrums, enuresis, persistent thumb sucking, night terrors, poor school achievement, lying, truancy, stealing, excessive daydreaming, over-aggressiveness, etc. Children and adolescents up to the age of eighteen are usually accepted but the majority of referrals are in the preadolescent group.

The emphasis in these clinics is on treatment. Obvious cases of gross mental deficiency, and children suffering only from neurological disorders, are not usually referred to these particular clinics.

Before a child is accepted for treatment, the parent is given an appointment for an intake interview with the psychiatric social worker. This case worker, who has had postgraduate work in psychiatry and sociology and has a Master's degree from a special school of psychiatric social work, has been trained in interviewing techniques. She has acquired special skill in securing from the parent not only the necessary medical and psychiatric history of the patient, but also the emotional feelings and attitudes of the parent toward the child, and toward other members of the family.

At one time the psychiatric social worker worked chiefly with the parent or parents and did "environmental manipulation". This function is now greatly diminished and her function is more that of a psychotherapist who deals with feelings and attitudes and who attempts "attitude therapy", i.e., to modify and/or correct the parents' attitude to the child and his problems.

The clinical psychologist is one who has had postgraduate work in general and also in abnormal psychology, and has either a M.A. or Ph.D. degree. He is not only skilled in administering various psychological tests to measure intelligence, but also administers personality tests, such as the Rorschach, T.A.T. (Thematic Apperception Test), etc. The clinical psychologist is also trained in research techniques and may do a certain amount of psychotherapy with the child; such treatment is done under the close supervision of the psychiatrist.

The psychiatrist heading a child guidance clinic is required to have a medical internship and a psychiatric residency, as well as a minimum of two years special training in child psychiatry.

If a physician wishes to refer a case to a child guidance clinic, he should prepare the parents in advance for this referral. Parents often become indignant when the physician makes an appointment for them at such a clinic and the family then learns that it is a psychiatric clinic. Sometimes such parents, resenting the implication of mental illness,

neither accept treatment in the clinic nor ever return to the referring physician.

When an appointment is made, the parent is told to come without the child and that he is to be interviewed by the social worker. At the intake interview the trained worker obtains a history from the parent, describes the manner in which the clinic operates, and attempts to evaluate whether or not the child is a suitable case for treatment. If the case appears suitable, both parents are told that they will be expected to come for treatment once a week, that while the child is having treatment by one staff member (usually the psychiatrist), the parent is to be having psychotherapeutic sessions with another staff member (usually a psychiatric social worker).

Before the child sees his therapist he has one or more appointments with the clinical psychologist who gives him intelligence tests, projective technique tests, etc.

In one of our clinics (Charlottesville) we use the principle that the most disturbed member of the family should be treated by the available staff member who has the greatest skill and professional experience. We also take into consideration the need of the child to work with a woman versus a man therapist. Thus, at times the psychiatrist may treat the child, the father or the mother. The clinical psychologist or the psychiatric social worker may treat the child or the parent.

Treatment of emotional disorders of children may require at least six months. Occasionally a child's symptoms may disappear within a few weeks after onset of treatment; on the other hand, children with physical complaints of psychogenic origin may cling to their symptoms indefinitely and may require one to two years of treatment.

Because of the limited number of personnel trained to work in child guidance clinics, the clinics in this, as in other states, have been forced to create waiting lists. This means that after a physician refers a child to such a clinic, the child may not be accepted for treatment for several months. Referring physicians are often disturbed about this waiting list and may try to bring pressure on clinic staff personnel to have their patient taken out of turn, or request that their patient be given diagnostic surveys.

The emphasis in child guidance clinics is on treatment, and not on diagnosis. For this reason, until more psychiatrists, psychiatric social workers and clinical psychologists are trained to work with children, it will be necessary to either maintain a waiting list or to provide inadequate and incomplete therapy for the child.

BOOK ANNOUNCEMENTS

You and Your Heart. A Clinic for Laymen on the Heart and Circulation. By H. M. MARVIN, M.D., and T. DUCKETT JONES, M.D., IRVINE H. PAGE, M.D., IRVING S. WRIGHT, M.D., DAVID D. RUTSTEIN, M.D. Foreword by Paul D. White, M.D. Random House, New York. 1950. xi-306 pages. Illustrated. Cloth. Price $3.00.

This volume was written for persons lacking medical background, but "in order to ensure clarity" the original manuscript of the physician-authors was "translated by a nonmedical writer into language that could not be misunderstood by lay readers." As stated in the introduction, "this is not a self-help book, designed to enable the reader to make diagnoses and prescribe treatment. Its chief purpose is to bring some measure of enlightenment and understanding" of cardio-vascular diseases "to all who read it, and a great comfort to many who have suffered needless anxiety through misunderstanding or lack of knowledge." Another purpose, no less laudable though somewhat more subtle, is to stimulate interest in the current efforts of the American Heart Association to foster more research, promulgate knowledge, and coordinate various health activities pertaining to the care of cardio-vascular patients.

The subject matter is reasonably comprehensive and, though most problems are viewed through distinctly rose-colored glasses, that is designedly so and as it should be. The doctor can safely recommend this book to his adult cardiacs and to the parents of younger ones in the secure knowledge that those who read it should profit thereby.

EDWARD A. DELARUE, JR., M.D.

The Practice of Medicine. By JONATHAN CAMPBELL MEAKINS, C.B.E., M.D., LL.D., D.Sc., formerly Professor of Medicine and Director of the Department of Medicine, McGill University; Formerly Physician-in-Chief, Royal Victoria Hospital, Montreal; Formerly Professor of Therapeutics and Clinical Medicine, University of Edinburg; etc. Fifth Edition. St. Louis, The C. V. Mosby Company. 1950. xx-1558 pages. With 518 illustrations including 50 in color. Cloth. Price $13.50.

EDITORIAL

William Crawford Gorgas (1854-1920)

PROVIDENCE or fate played a large role in developing the specialty of sanitary engineering. The sanitarian needed a spectacular disease for demonstration of his skill. An ordinary disease like malaria, even though it were more widespread, and actually killed more people, would not do. Nature supplied such a disease in yellow fever, a disease that had been endemic for more than two centuries in nearby Havana. Like syphilis it has been called an American disease, but medical historians have expressed grave doubts that either disease had its origin in the Western Hemisphere. However, both became firmly established in North America and Havana became the permanent focus from which the yellow jack invaded the sea ports of the United States at frequent intervals. Like other great epidemics it was carried by trade and destroyed commerce. Like the plague of the Renaissance it was the subject of much "literature" so that at its approach people fled in such numbers that few were left to bury the dead. Unlike other epidemic diseases it spread in mysterious ways and evaded the strictest quarantine. It defied all known means of control. It defeated victorious armies—the English in 1762 and Napoleon's picked troops in 1800, and was in a fair way of doing the same to the American Army of occupation of Cuba in 1900.

At the end of the Spanish-American War, Major Gorgas was put in charge of sanitation in Havana. The city was filthy according to the sanitary standards of the times and he set about cleaning it up. He soon had it as clean as any in the temperate zone. Intestinal diseases were greatly reduced but, much to the chagrin of the United States Army, yellow fever began to increase. The reason now is perfectly plain—the improved sanitary conditions of Havana had attracted many non-immune persons. The situation was becoming serious so the War Department sent down a special commission headed by Walter Reed (see previous chapter, *Virginia Med. Month.* 76:423, 1949) and in the course of months the mystery was solved. Carlos Findley, a Havana physician, by careful observation of the habits and distribution of the Stegomyia mosquito, had known since 1881 that this mosquito was the carrier of the disease, but was unable to prove it to the satisfaction of anyone else. He actually performed some inoculation experiments with his infected mosquitoes which failed. Henry R. Carter, an U.S. Public Health quarantine officer, demonstrated what the otherwise accurate observations of Findley had overlooked. Carter, with accurate records that he had kept of outbreaks of the disease in the Gulf States, showed that there was a time lag of some ten days before a new case became infectious. He called this "extrinsic incubation." Reed and his co-workers proceeded to demonstrate the truth of Findley's and Carter's theories. They proved that the Stegomyia mosquito was the culprit, but that she was innocuous until the virus of the disease had time to develop in her body, a period of several days. After this period of "extrinsic incubation" she became the most deadly of all animals. The problem then was how to get rid of the Aëdes aegypti, as this species is now called.

The yellow fever mosquito has one weak side. It is a domesticated insect, living only in and about human habitations. The female does not lay her eggs until she has fed upon human blood and then only in water contained in man-made vessels. It was then only necessary to keep a film of petroleum on the surface of water in rain barrels or otherwise mosquito proof them and to drain all the tin cans and other vessels containing useless water. This was considered to be an impossible task in Havana.

It certainly required great tact, patience, and perseverance. Gorgas was the man and he was on the spot. Even his name was a help for it had a Spanish sound.

Fate seemed determined to raise and train a proper adversary for the yellow jack, even supplying a proper prenatal background. Josiah Gorgas, who later became Chief Ordinance Officer of the Confederacy, was born at Myerstown, Pennsylvania, educated at West Point, and in the Mexican War, went as 1st Lieutenant to Vera Cruz. Here he contracted yellow fever. In 1853 he was in command of the arsenal at Mount Vernon near Mobile. Mount Vernon was high and dry and was a safe place to go when epidemics broke out in Mobile. In 1853 a severe epidemic visited Mobile and for that reason Amelia Gayle, daughter of Governor John Gayle, visited her uncle, Dr. Matthew Gayle, who lived next door to Gorgas' headquarters. Before the end of the year they were married and on October 3, 1854 William Crawford Gorgas was born. His birth was attended by Dr. Josiah Nott the celebrated doctor of Mobile who was one of the first to suggest that mosquitoes carried yellow fever.

Young William Gorgas, raised as he was in military atmosphere and spending the impressionable years between seven and eleven in the Capitol of the Confederacy, was determined to follow his father's career. Failing to get an appointment to West Point, he chose the only other way of becoming an officer in the United States Army i.e., medicine. His father, who had a poor opinion of Army doctors, advised against it but finally consented and, thus fatefully, William Crawford Gorgas became a medical student at Bellevue and in due time an officer in the United States Army. Yellow fever was destined to play a role in his own marriage, as it had done previously in that of his father's.

In 1882 Dr. Gorgas was assigned to Fort Brown with strict orders to avoid contact with yellow fever patients. He disobeyed these orders and was caught performing an autopsy on a yellow fever victim. He was arrested and court martialled and sentenced to the quarantine part of the Fort. The sentence was commuted after a few days. However, he contracted the disease as did his future wife, Miss Marie Doughty, who was visiting the family of the Commandant when Gorgas was sent to Fort Brown. After this, being immune, he was sent by the government wherever yellow fever appeared. It was not long before he had a reputation of being an expert on the disease. In 1898 he became chief sanitary officer in Havana, and when the Reed Commission made its report in 1901 his great hour had arrived. He freed Havana of yellow fever more quickly than he expected and turned his attention to the more difficult task of the control of malaria. His successes in Havana led to his appointment as head of the sanitary forces in the Panama Canal Zone. Here he lacked support of the engineers in charge of the work and his task was extremely difficult. With the small force of sanitarians at his command he concentrated on the mosquito and neglected garbage and smells. This was more than the old line engineers could stand. Complaints were lodged against him in Washington. On one occasion he came very near being supplanted by an osteopath, and on another by an English sanitarian. In 1906 the American Medical Association unofficially sent Dr. Charles A. L. Reed of Cincinnati, to investigate conditions on the isthmus. His report supported Gorgas' administration in every way. Matters came to a head when the Secretary of War demanded of the President, Theodore Roosevelt, that Gorgas be replaced. Mr. Roosevelt turned to Dr. Alexander Lambert of New York for advice. Lambert convinced the President that the success of building the canal depended on getting rid of yellow fever and that in turn depended on eradicating the Aëdes aegypti. Gorgas was not removed, but instead the President told the Commissioner he must get behind Gorgas. After that his task was greatly simplified.

Not only did Gorgas prove to the world that the white man could live safely and happily in the tropics but he convinced the world of the value of sanitary engineering. He was promoted to Surgeon-General which position he filled during the 1st World War. Upon reaching the retiring age he joined the Rockefeller Foundation in the project of eradicating yellow fever from the entire world. In 1902 he was on his way to investigate the rumor that there was still a focus of yellow fever in West Africa when he had a cerebral accident. He died in London, loaded down with honors and honorary degrees.

It should interest the readers of the *Monthly* to know that two of the principals, in this story, Reed and Carter, were Virginians, and a third, Gorgas, spent the impressionable years of his life in Richmond.

This is the 15th of a series "Doctors for whom the public should be thankful."

Rocky Mountain Medical Association

IN 1871 the American Medical Association met in San Francisco. This is the first time the A.M.A. had met on the Pacific Coast. In fact, only once had it been west of the Mississippi and that was in 1854 when it met in St. Louis. The journey was described as exhausting. In many other ways there were great differences. There was in 1871 no Journal of the Medical Association. Massachusetts and California reported that they had established departments of State medicine. The previous year the Association passed a resolution urging the Government to establish a national medical school. The association also wanted the Government to grow cinchona trees. In San Francisco, the President, Dr. Stille, lamented the fact that women had entered the ranks of the medical profession and doubted the wisdom of the move. This discussion was continued at the next annual session when Dr. D. W. Yandell in his presidential address came to the defense of the women. The delegates went to California in "palace cars", and there were no telephones in existence although the telegraph had been in use for about 25 years.

Rail transportation to the Pacific Coast began in 1869. For 123 physicians to make a trip across the Rockies in May, 1871 to attend a medical meeting in San Francisco was therefore considered quite a feat. To properly commemorate the event, these physicians organized a special society, the Rocky Mountain Medical Association.

The ladies who made the trip and the "few gentlemen who accompanied them" were made honorary members. The purpose of the Association was to meet once a year when the American Medical Association met, have a dinner together and listen to an address by their President. The first President was Dr. Washington Atlee. Dr. John Morris of Baltimore was Secretary and Treasurer. The addresses of the first four Presidents consisted mainly of anecdotes on medicine in general and on western travel in particular. Reminiscences of the long and arduous trip occupied a prominent part of the presidential addresses. The fifth President of the Association was Dr. J. M. Toner. His address was an account of the archæology of the country and a very complete description of Indian medicine with an excellent bibliography. It occupies 106 pages of the transactions of the Rocky Mountain Medical Association. Dr. N. S. Davis was elected sixth President. This is the last of the printed record of the Rocky Mountain Medical Association. Whether it survived Dr. Toner's address, or whether Dr. Davis ever held office, we have not been able to learn. There is no trace of a second volume of Transactions.

The Ninety-Ninth Annual Meeting of the American Medical Association June 26-30, 1950

MARK TWAIN was always enthusiastic about the badness of San Francisco weather, so we went prepared for anything. Evidently San Franciscans save up their perfect weather for A. M. A. conventions, for we had nothing but invigorating sunshine at just the right temperature. The San Franciscans are fine looking, sprightly people who look like they are having a good time. They dress well and eat well, and it is a pleasure to be with them.

An American Medical Association convention is a five-ring educational circus; with a scientific assembly, general meetings, motion pictures and television, technical and scientific exhibits, in addition to the business meetings of the House of Delegates. It seemed to us that the exhibits this year were not quite up to the usual standard. It may be that there were so many that we could not take them all in. Having the exhibits on three different levels is a distinct disadvantage to the aging portion of the membership.

The sectional meetings were well attended. They still form a valuable part of the convention. We were fortunate to hear two section chairman addresses. Dr. James R. Bloss of the Section on Obstetrics and Gynecology spoke on the causes of fear among obstetrical patients. Dr. Frederic W. Clement of the Section on Anesthesiology spoke on surgery before there was any anesthesia.

Among Virginians honored at the meeting was Dr. Russell L. Haden, who was elected to the Council on Medical Education and Hospitals. Dr. Walter B. Martin is an A. M. A. trustee.

The next clinical session will be held in Cleveland, December 5-8. It was to have been held in Denver but, on account of delays in construction of its auditorium, Denver had to withdraw its invitation.

SOCIETY PROCEEDINGS

Williamsburg-James City County Medical Society.

A called meeting was held in Williamsburg, June 16. After a dinner and social period the meeting was called to order by Dr. Eleanor H. Beamer-Maxwell, president. Fourteen members were present.

Dr. Joseph E. Barrett was selected as delegate to the meeting of the Medical Society of Virginia to be held at Roanoke in October. Dr. Beamer-Maxwell was designated as alternate.

After discussion of a matter which was referred to the Membership committee, the new president, Dr. Beamer-Maxwell, presented a list of committee appointments: Dr. Gordon Keppel, chairman of program committee; Dr. Frank A. Dick, chairman of membership committee; Dr. Joseph E. Barrett, chairman of special committee to carry out the ceremony of erecting a memorial plaque at Jamestown. Dr. Beamer-Maxwell pointed out that the constitution does not provide for a grievance committee as a standing committee, and asked instructions from the society. The society voted that the president would be authorized to appoint a special committee, to consider grievances when and if they are presented, to consist of three members to serve at the pleasure of the president.

The meeting adjourned until the next meeting on September 15, 1950.

Dr. Granville L. Jones of Williamsburg is secretary of the Society.

Wise County Medical Society.

There was an unusually good meeting of this Society on June 14th, with Dr. W. B. Barton of Stonega presiding. Thirty-three physicians and several visitors were in attendance. The meeting was held at Hotel Norton in Norton and, following a social hour, a country style steak dinner was enjoyed, Dutch treat. Dr. J. A. Pettigrew of Dunbar was elected to membership.

The guest speakers were Dr. B. M. Overholt,

whose subject was The Peptic Ulcer Syndrome, and Dr. Herbert Acuff, who spoke on Lesions of the Colon, with Diagnosis and Management. Both speakers are of the Acuff Clinic, Knoxville, Tenn.

NEWS

University of Virginia, Department of Medicine, Commencement.

Exercises incident to the commencement of the medical as well as other departments of the University of Virginia were held on June 9 to 12 inclusive. A feature of the celebration was a housewarming in the remodeled and enlarged Alumni Hall for all alumni. Dr. Vernon W. Lippard, dean of the Department of Medicine, told the medical alumni of the changes in the medical curriculum to be effective next Fall. Golf, the annual barbecue and dances added to the social features. The baccalaureate address by Dr. Joseph Sittler, Jr., of the Chicago Lutheran Theological Seminary, class day exercises, and a reception by President and Mrs. Colgate W. Darden, Jr., completed Sunday's program. The graduating exercises and conferring of degrees took place in McIntire Amphitheater on Monday, with the final ball that evening.

The list of medical graduates with their hospital appointments follows:

University of Virginia Hospital, Charlottesville: Drs. Ivan Hays Bush, Reedy, W. Va.; John Baldwin Catlett, Richmond; Marion Dees Faris, Charlotte, N. C.; Warren Collins Gregory, Atlanta, Ga.; Rozelle Hahn, Columbus, Miss.; Seth Guilford Hobart, Charlottesville; Paul Randall Marsh, Charlottesville; Samuel Edmund Miller, Lexington; James Cipriano Respess, Norfolk; E. A. Sawada, Agana, Guam; Frank Eugene Taylor, Richmond; and James Burnley Wood, Charlottesville.

Memorial and Crippled Children's Hospital, Roanoke: Drs. Everett Lee Coffey and Walter Buhrman Garland, Jr., both of Roanoke.

De Paul Hospital, Norfolk: Drs. Fred Selden Cruser, William Henry Romm, and James Mounts Wolcott, Jr., Norfolk, and Thomas Marion Hall, Richmond.

Blue Ridge Sanatorium, Charlottesville: Dr. James Andrew DeLozier, Boyds Creek, Tenn.

U. S. Naval Hospital, Portsmouth: Dr. Charles Old Barclay, Jr., Portsmouth.

Duke University Hospital, Durham, N. C.: Drs. Robert Sims Caldwell, Baldwyn, Miss., and Reginald Buchanan Henry, Jr., Norfolk.

Santa Barbara Cottage Hospital, Santa Barbara, Calif.: Dr. William Russell Brooks, Radford.

U. S. Naval Hospital, San Diego, Calif.: Drs. James Campbell Cantrill, Georgetown, Ky., and Joseph Leon Schwartz, Jr., Charlottesville.

Fitzsimons General Hospital, Denver, Col.: Dr. George Allen Buckmaster, Akron, Ohio.

Johns Hopkins Hospital, Baltimore, Md.: Drs. James Colvin Causey, Lester Manor, and John Archibald Campbell Colston, Jr., Baltimore, Md.

Union Memorial Hospital, Baltimore, Md.: Drs. Clarence Brock Trower, Jr., Norfolk, and Josiah Frederick Reed, Jr., Harrisburg, Pa.

Bayamon Puerto Rico Hospital, Bayamon, P. R.: Dr. Cristino Manuel Colon-Betances, Rio Piedras, P. R.

Presbyterian Hospital, San Juan, P. R.: Dr. Gladys Pietri-Oma Sutherland, San Germain, P. R.

Strong Memorial Hospital, Rochester, N. Y.: Drs. Paul Tulane Craddock, Lynchburg, and Glenn Brady Updike, Jr., Danville.

New York Postgraduate Hospital, New York, N. Y.: Dr. Harrison Fertig, Plainfield, N. J.

Beth Israel Hospital, New York, N. Y.: Dr. Robert Louis Rowan, Brooklyn, N. Y.

U. S. Naval Hospital, St. Albans, N. Y.: Dr. Benjamin Price Riley, Jr., New York, N. Y.

Beth Israel Hospital, Boston, Mass.: Dr. Robert Jerold Frank, Newport News.

U. S. Marine Hospital, U.S. P. H. S., Seattle, Wash.: Drs. Claude Robertson Garfield, Arlington, and Theodore Lathers Marks, Queens Village, N. Y.

Queens Hospital, Honolulu, T. H.: Dr. Lawrence Noah Gilliam, Wise.

Tripler General Hospital, Honolulu, T. H.: Richard Eugene Rankin, Mount Holly, N. C.

Charity Hospital, New Orleans, La.: Drs. George William Herring, Meridian, Miss., and Robert Edgar Mitchell, Jr., Richmond.

Minneapolis General Hospital, Minneapolis, Minn.: Dr. Guy Foster Hollifield, Martinsville.

Medical Branch, University of Texas, Dallas, Texas: Dr. James Morrison Hutcheson, Jr., Richmond.

Parkland Hospital, Dallas, Texas: Dr. Elmer Oswald Smith, Jr., Alexandria.

Indiana University Medical Center, Indianapolis, Ind.: Dr. Patricia Ann Lawrence, Charlotte, N. C.

Georgetown University Hospital, Washington, D. C.: Dr. Edward Joseph Mears, Norfolk.

Indianapolis General Hospital, Indianapolis, Ind.: Dr. Rupert Wilson Quaintance, Jr., Slate Mills.

Robert Packer Hospital, Sayre, Pa.: Dr. Beryl Macy Oser, Newport News.

Barnes Hospital, St. Louis, Mo.: Drs. Dorothy Louella Reycroft, Monessen, Pa., and Paul Howard Wornom, Dare.

Jefferson-Hillman Hospital, Birmingham, Ala.: Dr. John Kenneth Robertson, Winston-Salem, N. C.

Cincinnati General Hospital, Cincinnati, O.: Dr. David Valentine Strider, Charles Town, W. Va.

Hartford Hospital, Hartford, Conn.: Dr. Elliott Boyd Sweet, West Hartford, Conn.

Grace-New Haven Community Hospital, (New Haven Unit) New Haven, Conn.: Dr. William Geoffrey Wysor, Jr., Richmond.

University of Michigan Hospital, Ann Arbor, Mich.: Dr. Bruce Edward Toppin, New Castle, Ind.

Delaware Hospital, Wilmington, Del.: Dr. Charles William Wagner, Wilmington, Del.

Borderline Licensure.

Section 54-274 of the Code of Virginia makes it unlawful for any person to practice in Virginia without a license. However, a Virginia license is not required of a person residing on the border of a neighboring State or the District of Columbia who is licensed to practice in the state or district of residence if the following conditions are met: (1) The practitioner has satisfied the Virginia Board of Medical Examiners that he is eligible for such practice, has registered with the Board, paid the fee of one dollar, and obtained a certificate to practice: (2) he does not open an office or appoint a place in Virginia to meet his patients or receive calls: (3) the state or district in which he resides has extended a similar privilege to persons licensed in Virginia.

The certificate of registration shall be renewed each year, and the annual fee of one dollar paid.

Scientific Exhibits

Very excellent and ample space for the Scientific Exhibits at the Hotel Roanoke has been assigned to the Exhibit Committee. The same decorating firm which furnished the booths last year will again service us. Those who saw the exhibits last year will remember the same equipment is furnished as is used at the A.M.A. Viewing boxes for transparencies are also furnished which are fitted with fluorescent lights.

In order to secure desirable space, all exhibitors are requested to write the Chairman of the Scientific Exhibit Committee, Charles H. Peterson, M.D., 603 Medical Arts Building, Roanoke, Va., for application blanks as soon as possible. This will enable the committee to "block out" the space more efficiently.

Special Service by a Component Society.

The Alexandria Medical Society is aware of the fact that medical emergencies do arise wherein one's personal physician may not be available immediately. Also, in cases of transient and recent residents, there may not be a personal physician on whom they may call. Therefore, it is the desire of the Alexandria Medical Society that emergency medical care be available to the citizens of Alexandria at all times. On July 1, 1950, the local medical society is initiating a service to provide emergency care. This type of service has been successfully established by other medical societies throughout the country.

To simplify and accelerate the obtaining of an emergency physician, the Alexandria Medical Society has set up a switchboard which will be staffed 24 hours a day the year round. The switchboard is listed under the name of the Alexandria Medical Society. Individuals in need of this service merely have to call this number and they will be directed to the doctor or doctors on call.

Recent residents of the Alexandria area may obtain names of physicians for other than emergency services, as well as the names of specialists in the various medical fields by calling that Society.

The Alexandria Medical Society has organized and is financing these services to make sure that no one in the city of Alexandria and environments will lack medical attention.

Dr. Henry Chesley Decker,

Class of '47, Medical College of Virginia, has just completed a residency in internal medicine at Woman's Hospital, Baltimore, and he and his wife have come back to Richmond to make their home. He will first serve a residency in internal medicine at Johnston Willis Hospital after which he will be associated with his father, Dr. H. W. Decker, of this city.

Mathews County Has First Hospital.

Dr. William A. Sadler of Mathews has opened his maternity hospital in that town, though the work will not be limited to obstetrics. He will have the assistance of his wife, the former Lynn Mapp Powell as general supervisor. She is a graduate nurse from Elizabeth Buxton Hospital, Newport News, and was formerly obstetrical supervisor there.

Dr. and Mrs. W. Ambrose McGee

And children left Richmond the middle of July to make their future home in Palm Beach, Florida, where Dr. McGee will limit his practice to allergy. Upon leaving Richmond, he will stop at Saluda, N. C., where he will lecture in the Pediatric Seminar as he has for several years.

The American College of Physicians

Will conduct its 32nd annual session at St. Louis, Mo., April 9-13, inclusive, 1951. Dr. Ralph Kinsella of St. Louis is the General Chairman and will be responsible for local arrangements and for the program of Clinics and Panel Discussions. Dr. William S. Middleton, President of the College, Madison, Wis., will be in charge of the program of morning lectures and afternoon general sessions.

Grants for Cancer Research in Hospitals.

Virginia's two medical schools have been included in grants made by the National Cancer Institute for supporting cancer research in hospitals, universities and other non-Federal institutions. They were made upon the recommendation by the National Advisory Cancer Council and the approval of Surgeon General Leonard A. Schele of the Public Health Service. The project directors in Virginia allowed this grant are Dr. George Zur Williams and Dr. Nelson F. Young at the Medical College of Virginia, and Dr. H. Rowland Pearsall at the University of Virginia.

Dr. Frank Blanton,

Class of '46, University of Virginia, Department of Medicine, son of Dr. and Mrs. Wyndham Blanton of this city, is locating in Richmond where he will be an assistant resident at the Medical College of Virginia Hospital. He recently completed a residency at Strong Memorial Hospital, Rochester, N. Y.

Dr. Charles E. Llewellyn, Jr.,

Of Richmond, has gone to Denver, Colorado, where he will be one of the resident physicians at the Colorado General Hospital. His wife accompanied him.

Dr. J. M. Dixon

Of Roanoke has been selected as a Fellow by the Heed Ophthalmic Foundation, and will do research and study at Harvard, Columbia and Northwestern Universities with Drs. Dunphy, Dunnington and Vail.

In June, Dr. Dixon presented a paper at the meeting of the Association for Research in Ophthalmology held in San Francisco.

Award for Outstanding Research in the Field of Infertility.

The American Society for the Study of Sterility offers an annual award of $1000 known as the Ortho Award, for an outstanding contribution to the subject of infertility and sterility. Competition is open to those in clinical practice as well as individuals whose work is restricted to research in the basic sciences. Essays submitted for the 1951 contest must be received not later than March 1, 1951. The Prize Essay will appear on the program of the 1951 meeting of the Society. For full particulars, address The American Society for the Study of Sterility, 20 Magnolia Terrace, Springfield, Mass.

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Advertisers in our journal are carefully selected. Only those meeting our advertising standards may use the facilities of our pages. No advertisement will be accepted which, either by intent or inference, would result in misleading the reader. May we suggest that you review the ads in each issue of our journal and, when occasion arises to prescribe products featured or use the facilities offered, tell them you saw their ad in the *Virginia Medical Monthly*.

Dr. A. L. Herring, Jr.,

Returned to Richmond, July 1st, after having served a six-months fellowship in pathology in the laboratory of Dr. Shields Warren at New England Deaconess Hospital, Boston. He will be engaged in

the practice of general surgery at Grace Hospital in Richmond.

Health Information Foundation.

This organization, launched early in the year, is devoted to the betterment of health of the nation by means of a continuing study of the nation's health facilities. It is being financed by members of the pharmaceutical, drug and allied industries. Admiral William H. P. Blandy, who was in charge of atomic bomb tests at Bikini and recently retired from the position of Commander-in-Chief of the Atlantic Fleet, is president of the organization, and John G. Searle, president of G. D. Searle & Company of Chicago, is chairman of the Board. The officers and directors of the Foundation are officers in many of the leading pharmaceutical and other industries, all interested in the nation's health facilities and the collection and distribution of information as to methods of protecting individuals and their families against financial hardships of sickness and accident. It encourages the use of health services and hospitalization on a voluntary prepayment basis.

Dr. H. L. Baptist,

For many years of Ivy Depot, but more recently of Granite Quarry, North Carolina, has retired from practice and has returned to Virginia. He is now living at Gloucester Point.

News from University of Virginia Department of Medicine.

Dr. John Hamilton Allan, formerly associated with the School of Medicine of the University of Pennsylvania, has joined the faculty of the Department of Medicine of the University of Virginia as Professor and Chairman of the School of Orthopedics.

Dr. Joseph F. A. McManus, formerly associate professor of Pathology at the Medical College of Alabama, has joined the faculty of the University as associate professor of Pathology.

Dr. Morris Sullivan McKeehan, formerly associated with the Department of Zoology, University of Chicago, will join the School of Anatomy, University of Virginia, on September 1st as assistant professor of Anatomy.

Dr. Paxton Stodder, formerly intern in Medicine at the Massachusetts Memorial Hospital, has been appointed Instructor in Pharmacology at the University of Virginia.

Dr. Thomas Warren has been appointed Instructor in Clinical Pathology at the University.

The following former members of the resident staff of the University of Virginia Hospital have been appointed full-time instructors in the Department of Medicine:

Dr. Dwight Brown—Obstetrics & Gynecology
Dr. Samuel Hay—Internal Medicine
Dr. Robert Kelley—Urology
Dr. Carey Moon—Otolaryngology

The following promotions in the Faculty of Medicine, University of Virginia Department of Medicine, are announced:

Dr. William Norman Thornton, Jr., from associate professor to Professor and Chairman of the School of Obstetrics and Gynecology.

Dr. Oliver B. Bobbitt, from Instructor to Assistant Professor of Clinical Pathology.

The annual meeting of the University of Virginia Alumni Association was held on June 9th with an attendance of approximately 150. Dr. Edward F. Bland, Class of 1927, associate in medicine at Harvard Medical School and Physician to the Massachusetts General Hospital, gave the annual address by an alumnus. Other papers on the scientific program were presented by members of the Medical Faculty. President Colgate W. Darden, Jr., and Dr. Seale Harris of Birmingham, Alabama, spoke at the dinner.

Dr. Dudley C. Smith, Professor of Dermatology and Syphilology, has been elected Chairman of the Section on Dermatology and Syphilology of the American Medical Association for 1950-1951.

Contracts have been let for erection of the unit for research and treatment in the field of cancer. Total cost of the project is approximately $250,000.

The International College of Surgeons,

United States Chapter, will hold its fifteenth Annual Assembly and Convocation in Cleveland, Ohio, October 31, November 1, 2, 3.

The program will include scientific sessions on subjects in the fields of general surgery; eye, ear, nose and throat surgery; gynecology and obstetrics; urology; and orthopedic, thoracic, plastic and neurological surgery. In addition, an extensive technical and scientific exhibit will be presented by lead-

ing manufacturers of surgical instruments, x-ray apparatus, operating room and hospital equipment, pharmaceuticals and others. Special entertainment for the doctors' ladies has been planned. Several hundred surgeons will be received as Associates and Fellows of the International College at the Convocation to be held in the Cleveland Public Auditorium, November 3.

All doctors of medicine interested in surgery and its advancement are invited to attend, and can obtain a program upon request to Arnold S. Jackson, M.D., Secretary, Jackson Clinic, Madison 4, Wisconsin. For hotel reservations, contact Committee on Hotels, International College of Surgeons, U.S. Chapter, 511 Terminal Building, Cleveland 13, Ohio.

Conference on Cortisone.

Dr. Tom D. Spies, Dr. Robert E. Stone, Dr. Samuel Dreizen, and other members of the staff of the Nutrition Clinic, Hillman Hospital, Birmingham, conducted on June 13, an all-day Conference on Cortisone, the first of its kind even to be held. Some four hundred physicians attended the Conference from Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee.

Married.

Dr. Mortimer Lee Williams, son of Dr. and Mrs. Mortimer H. Williams of Roanoke, and Miss Shirley Sawyer, daughter of Dr. and Mrs. Howard Martin Sawyer of North Andover, Mass., July 1. They will live in Baltimore, Maryland.

The Southern Medical Association

Is to hold its annual meeting in St. Louis, November 13-16, under the presidency of Dr. Hamilton W. McKay of Charlotte, North Carolina. Several organizations will meet conjointly with the S.M.A. Scientific and technical exhibits will add to the interest of the meeting. The Kiel Municipal Auditorium will be headquarters for meetings and exhibits.

There are a number of good hotels in walking distance of the Auditorium, but it is suggested that accommodations should be secured by addressing the Housing Bureau, Southern Medical Association, 911 Locust Street, Room 406, St. Louis 1, Mo.

The Pennsylvania Academy of Ophthalmology and Otolaryngology

Held its annual meeting May 12, 13, 14, at the Bedford Springs Hotel, Bedford, Pennsylvania.

In addition to the formal presentation of papers, two Round Table Discussions were held.

The newly elected officers are: President, Dr. Jay G. Linn, Pittsburgh; President-Elect, Dr. Matthew S. Ersner, Philadelphia; Secretary, Dr. Daniel S. DeStio, Pittsburgh; and Treasurer, Dr. Bruce A. Grove, York.

A Medico-Military Symposium

For officers of the Fourth Naval District will be held at the U.S. Naval Hospital, Philadelphia, from October 23 to 28. Speeches and panel discussions are scheduled in aviation medicine, national defense in case of disaster or attack, national preparedness, psychiatry, submarine medicine, surgery, and orthopedics. This is for the purpose of keeping military Reserve Medical Officers of the Armed Forces posted on the latest developments in the field of medical science.

Officers are urged to make reservations well in advance since no government housing facilities will be available. All members of the medical profession are invited to attend.

American Medical Writers' Association

Will hold its annual meeting at the Elks Club, Springfield, Ill., Wednesday, September 27, during the 15th annual meeting of the Mississippi Valley Medical Society, September 27-29. In the afternoon there will be papers by Frank G. Dickinson, Ph.D., Director of the Bureau of Medical Economic Research, American Medical Association and Theodore R. Van Dellen, M.D., Health Editor, Chicago Tribune, with appropriate discussions. In the evening Walter C. Alvarez, M.D., Professor of Medicine, Mayo Foundation, Rochester, Minn., and the Editor of the new publication, *General Practice,* will take over to be followed by a stag entertainment conducted by the Sangamon County Medical Society.

A program may be secured from the Secretary, Harold Swanberg, M.D., 209-224 W.C.U. Building, Quincy, Ill.

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OBITUARIES

Dr. Charles James Andrews,

Widely known obstetrician and gynecologist of Norfolk, died June 19th at his home there, after a long illness. He was born in Bedford County seventy-four years ago and graduated in medicine from the Medical College of Virginia in 1902. He had practiced in Norfolk for 46 years and it is estimated he had delivered about 8,000 babies in that time. He was a past president of the Norfolk County Medical Society, and was affiliated with a number of other medical organizations in all of which he had been an enthusiastic member. He was for sometime chairman of the Maternal Health Committee of the Medical Society of Virginia. He had also taken an active part in civic affairs and was largely instrumental in getting milk pasteurized in the Norfolk area.

Besides his wife, Dr. Andrews is survived by two sons, both of whom are doctors, and also by a sister.

Dr. Edward P. McGavock,

Of Wytheville, died July the 5th in a Roanoke hospital. He was eighty-one years of age and a graduate in medicine from the University of Virginia in 1893. He lived for many years in Richmond and was formerly professor of Dermatology and Syphilology at the Medical College of Virginia. He retired from practice about ten years ago and went to Wytheville. He was a member of the first Fifty Year Club of the Medical Society of Virginia. A brother is Dr. John F. McGavock of Charlottesville.

Dr. Charles DeVault Prather, Jr.,

Leesburg, died June the 29th, following a heart attack. He was a native of Washington, D. C., and 29 years of age. He graduated from George Washington University School of Medicine in Washington in 1945, and started practice in Loudoun County in the summer of 1947. He was vice-chairman of the staff of Leesburg Hospital and a member of the Medical Society of Virginia. He is survived by his wife and two small daughters as well as his parents.

Dr. Ernest Hamlin Alderman,

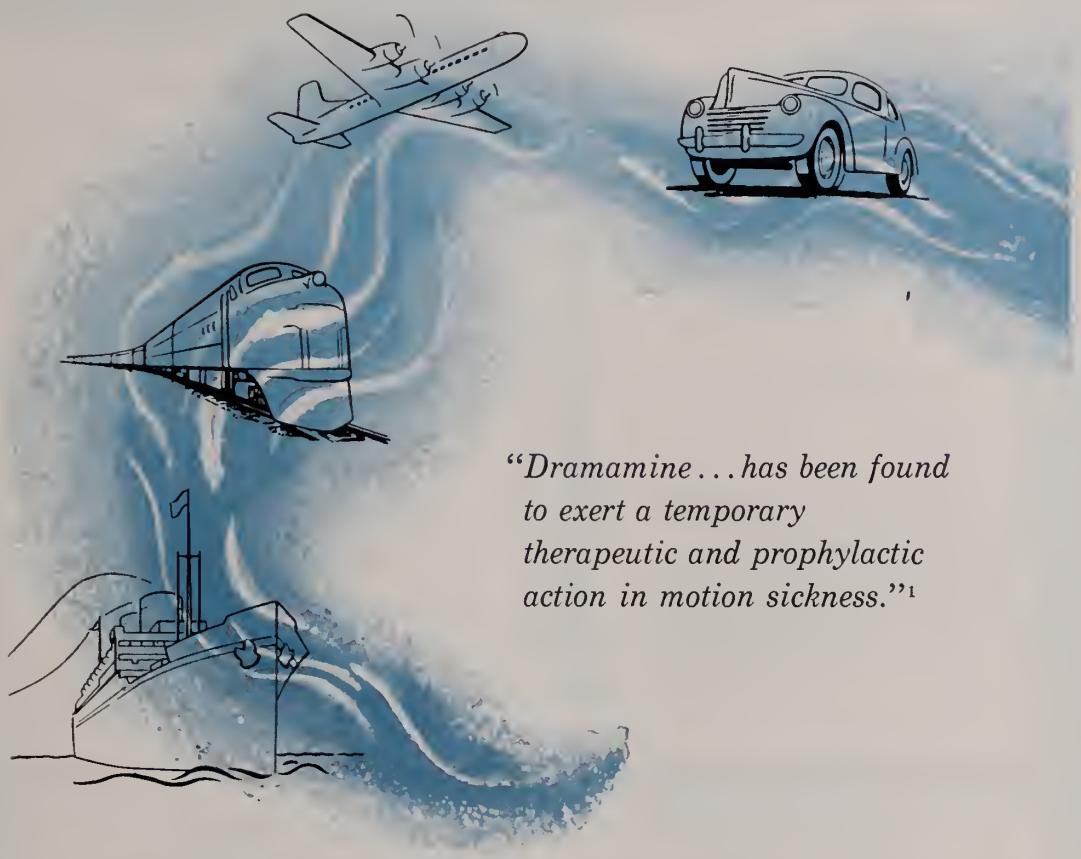
Of Richmond, died suddenly on the street June 27th, as he was leaving the City Hall where he had been a witness in a contested will case. Dr. Alderman was born in Greensboro, N. C., in 1891 and graduated in medicine from the University of Virginia in 1921. After serving on the staff of Eastern State Hospital, Williamsburg, he joined the staff at Westbrook Sanatorium in 1928, with which he had since been connected. He was for sometime a member of the Medical Society of Virginia. His wife and several children survive him.

Dr. Herman H. Hines,

Of Pennington Gap, died July the 5th in a Norton hospital. He was forty-two years of age and a graduate of the Medical College of Virginia in the class of 1935. He practiced for a while in Richmond before entering the army in World War II where he served for four and a half years. He received a severe neck injury about eighteen months ago in an automobile accident from which he had suffered from time to time. His wife, mother and a large family connection survive him.

Mr. J. R. McCauley.

It is with regret that we announce the death of Mr. McCauley, secretary-treasurer of the Medical College of Virginia for many years. He had been a member of the staff of the College for 46 years. His death came as the result of a heart attack while he was at work.



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1. Council on Pharmacy & Chemistry: New and Nonofficial Remedies, 1950, Philadelphia, J. B. Lippincott Co., 1950, p. 460.

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1950 CONVENTION

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JAMES MARION SIMS
ISSUE

September, 1950

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1. Beckman, H.: Treatment in General Practice. Philadelphia, Saunders, 5th ed., 1946, 704-705.
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Virginia Medical Monthly

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WHOLE No. 1179

RICHMOND, VA., SEPTEMBER, 1950

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GUEST EDITORIAL

Interrelationships of Medicine and Speech Pathology

ALL of us whose work deals primarily with the ills and problems of our fellow men will readily testify to the limitless complexity of the human organism. The study and research of our colleagues, past and present, has unearthed and classified a vast fund of information. There is, in fact, so much knowledge currently available that no single individual is able to assimilate and use all of it. As a result, we have entered an age of specialization. Physicians, dentists, psychologists, educators, and many others each have staked out a claim to a particular portion of the investigation and rehabilitation of the individual. In most cases these larger fields have been divided and subdivided. Some of the work overlaps; some remains entirely a function of just one group of specialists.

The fields of speech pathology and audiology are two comparatively new additions to this pattern. This writing constitutes an attempt to describe and explain the purpose and functions of the speech pathologist and the existing relationship of his work to that of the physician.

What, first of all, is a "speech defect?" It is a functionally—or organically—caused deviation from a normal speech pattern sufficiently serious to call attention to itself and constitute a potential handicap in the social, educational, and occupational activities of the individual.

It is conservatively estimated that there are from four to seven million people in the United States possessing some sort of speech handicap. These problems may be broadly classified as follows:

(1) Articulatory defects (dyslalias and dysarthrias). The largest category, in terms of the number affected, this group includes those disorders in which the individual sounds of speech are distorted or omitted. The etiology of such disorders may involve functional or organic anomalies, and may include such diverse problems as the delayed speech of children and the lateral lisp of the adult.

(2) Defects of voice (dysphonias). When the structures utilized for phonation and resonance are diseased or defective, or when they are improperly used, the quality of the vocal tone may appear faulty and inadequate for communicative purposes.

(3) Dysphemias. Included in this category are disorders such as stuttering, which result primarily from psychopathologies.

(4) Dysphasias. These are disorders of linguistic symbolization.

(5) Dyslogias. This classification includes the linguistic disorders other than those of symbolization.

Logically, one might next inquire how the speech specialist deals with the problems with which he is confronted: A word concerning his training may clarify his role. The

American Speech and Hearing Association, the national speech correction organization, recognizes two levels of skill and competence: *Clinical Membership* requires a minimum of a year's training beyond the basic college course work plus one year of supervised practice. This training is sufficient to enable the individual to undertake public school speech therapy, or clinical practice where experienced supervision is available. *Professional* or *Fellow Membership* is granted to those who have completed at least three years of post-graduate work and have had, in addition, four or more years of professional experience.

The academic training of the speech pathologist includes many specialized courses in speech correction, audiology, psychology, anatomy, neurology, and other related areas. By virtue of this relatively wide and varied academic experience he is enabled to consider the total pattern of behavior of the individual, and evaluate his needs considerably beyond the immediate evidence evoked by the speech symptoms. Moreover, the study and training provides an acute realization that he cannot perform without aid the job necessary for the rehabilitation of many of the individuals who consult him. Just as the physician finds it necessary to make a referral to a professional colleague for a more detailed study of some particular aspect of an organic problem, so too, the speech pathologist must rely upon the advice of other specialists where speech symptoms give evidence of other possible disorders.

There is, then, a close interrelationship between speech pathologists and the medical profession. This relationship is based upon the fundamental premise of the speech pathologist that speech is an integral part of the total physical and psychological makeup of the individual, rather than a separate or distinct entity in itself. In both the diagnosis and treatment of most speech disorders, far more than the symptoms must be considered.

The speech pathologist must consult the physician to obtain such information as follows: the condition of the hearing mechanism, including diagnosis of such conditions as otitis media, otosclerosis, and other pathologies; organic problems present in the nasal area and recommendation for the treatment of such conditions as polyps, allergies, and infectious diseases; the formation of the oral structures, with information concerning the therapy needed for palate damage, tonsils, etc.; the question of laryngeal anomalies, including nodules and possible malignant conditions; and general information concerning the glandular and organic functions of the patient which might be related to the speech symptoms discovered.

The speech pathologist also finds occasion to request information from other specialists, including dentists, psychologists, and educators. when it is believed that significant information may be obtained.

In short, the speech specialist adopts an objective attitude toward every problem with which he is confronted, and is compelled to utilize every possible source of information in order to obtain the facts necessary to determine the nature and extent of the therapy to be provided for the patient.

On the other hand, this therapist is in a position to assist the physician in many cases. This fact is important—and must be recognized: Speech difficulties are not to be taken lightly or ignored. While some speech problems tend to disappear during the normal course of maturation, a surprisingly high percentage continues throughout the life of the individual, unless steps are taken to correct the disorders. Moreover, most speech problems can be treated most successfully at an early age. Hence, positive measures should be taken to secure consultation and advice from a speech pathologist

whenever a speech defect is discovered. In some cases, advice and recommendations made to parents and teachers of children may be sufficient to counteract the potential ill-effects of the speech disorder.

The speech correctionist, by virtue of his training in this work, is in a position to provide the necessary services and to supplement the work of the physician. In speech problems, as in the organic defects treated by a physician, prevention or correction in the early stages is certainly the best safeguard against a lifelong handicap.

Because speech correction is a relatively new field, its services are not yet widely available. During the past five years, however, these services have been extended considerably in the State of Virginia. At the present time there are a number of sources of help in this state to which patients may be referred. The Speech and Hearing Center at the University of Virginia is, at present, the focal point for work in speech pathology in this state. Its services include both facilities for clinical diagnosis and therapy of speech disorders and hearing problems, and also a training center for the instruction of potential speech pathologists. In addition, speech clinics are being established at Hampton Institute and Madison College.

The State of Virginia has, within its administrative bounds, two other possible sources of such rehabilitation; a Speech Clinic at the Woodrow Wilson Educational Center—operated by the Vocational and Industrial Rehabilitation Division, and a State Supervisor of speech correction working out of the Special Education Division in Richmond. Two private organizations, the Richmond Junior League and the Hampton Roads Service League, have sponsored speech clinics primarily to serve children.

The public schools in some localities have employed correctionists as a part of the instructional staff of the school division. A partial list of these localities includes Richmond, Arlington County, Roanoke, and Waynesboro. Several other localities plan to add these specialists within the next year.

In summary then, one is inclined to make several observations: Those of us in the speech profession believe that we can do our best work in the rehabilitation of those with speech disorders only if we can secure the complete cooperation of other professions dealing with the physical, psychological, and educational aspects of the individual. By the same token we further believe that we are in a position to render a unique and valuable service to these same professions by our provision of the rehabilitation which is peculiarily within our own province. Understanding of the interrelationship among the various fields is one of the best ways to improve this team work. Believing that a speech handicap can be just as detrimental to a person's normal adjustment as a crippled leg or an incapacitating disease, we feel obligated to restore the fullest possible measure of adequate speech to every case we may encounter. Because the democratic process upon which our country is based requires that each individual be able to exercise his right to express his vocal opinion, we believe that good speech is one of the most important safeguards to our way of life.

James M. Mullendore, Ph.D.

Editor's Note: Dr. Mullendore is Director of the Speech Clinic at the University of Virginia, Charlottesville.

LIPOID PNEUMONIA DUE TO THE USE OF MINERAL OIL AS A LAXATIVE*

E. BARON, M.D.,
Kecoughtan, Virginia.

Lipoid pneumonia can be classified as one of the man-made diseases, inasmuch as it does not occur naturally; but can be attributed to the medicinal use of oil for nose drops, vitamins, or mineral oil laxatives. Many cases have also been reported following the use of fish oils in young children, where the administration of vitamin preparations is frequently associated with struggling and possible aspiration.

Lipoid pneumonia was first described by Laughlen in 1925, caused by the use of oily nose drops. Since then there have been numerous reports of the disease in the literature, and many discussions as to whether more cases were due to the use of mineral oil laxatives or nose drops. It is apparent, however, that both can cause lipoid pneumonia and their use should be restricted accordingly.

Different types of oils when aspirated into the lungs result in considerable variation in response. All oils are irritating to some degree. Most fish oils and free fatty acids are the more irritating types. Mineral oil, while not immediately irritating, is neither absorbable, nor assimilable. Being a saturated hydrocarbon, the body has not the ability to digest mineral oil and, consequently, it remains in the lungs indefinitely, except for the small amounts which appear in the sputum.

There are many predisposing factors which lead to the aspiration of oil, such as anatomical defects in the mouth, palate, tongue, larynx or esophagus; neurologic disturbances which interfere with swallowing, such as hemiplegias, senility and generalized debility; and in infants and psychotics, the use of forced feedings. Another factor, which predisposes to aspiration, is the fact that mineral oil, being bland, does not initiate the cough reflex. In hospitals, laxatives are usually administered at night, and a few drops can easily trickle down the trachea each night while the patient is asleep, reaching the alveoli. Over a long period of time, considerable mineral oil can accumulate thereby in the lungs.

The degree of lung reaction depends upon a number of factors, such as the amount of oil aspirated, the type of oil and the length of time it has remained in the lungs. When mineral oil reaches the dependent portions of the lungs it first remains free in the alveoli, but it is later picked up, in large or small droplets by the macrophages—sometimes called lipophages. At this stage the lung on section shows firm, yellow, patchy areas of consolidation. The microscopic picture shows alveoli containing varying numbers of oil filled foam cells and some serous fluid. The picture is frequently complicated by the presence of polymorphonuclears, as many patients are also prone to aspirate other foreign material as well. Some of the mineral oil can be disposed of in the sputum and a very small amount reaches the lymph nodes. The bulk, however, remains indefinitely in the lung. Ultimately there is the slow development of fibrous tissue which leads to permanent damage and renders the lesion detectable by X-ray. The lower lobes, particularly the right, are more apt to be involved. The abnormal lung is a fertile soil for repeated bouts of bronchopneumonia which ultimately may be responsible for the death of the patient.

The clinical diagnosis of lipoid pneumonia is seldom suspected, and even more seldom proven. In fact, many cases are no doubt not recognized even at autopsy. Nathanson *et al.* have had some success in making the clinical diagnosis by using aspiration biopsies of the involved areas. The history can be of help if the patient is debilitated, if he has some defect which predisposed to aspiration, and if he used mineral oil habitually. Many have a history of repeated bouts of bronchopneumonia involving the same areas of lung and a chronic cough with white sputum. The X-ray findings are not characteristic inasmuch as they can be interpreted as pulmonary fibrosis, atelectasis, or even carcinoma (Jones). The X-ray findings persist unchanged for many years even when the patient is afebrile and the use of mineral oil has been stopped. Oil may be detected in the sputum if it is allowed to stand and a cigarette paper placed on the surface. The oil droplets may stain the paper, or the oil can be stained in wet

*Read at the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

preparations with the use of oil stains.

The treatment is prophylactic inasmuch as the oil cannot be removed from the lungs once it reaches there. In some cases, lobectomy and pneumonectomy have been performed because the X-ray appearances were those of carcinoma. However, resection is hardly to be recommended. Laxatives containing mineral oil should not be used, nor should oily nose drops be instilled in the respiratory tract.

Case Reports

1. A-117-47, a 77 year old white male, had a 7 year history of dyspnea and a persistent non-productive cough. He had been using considerable mineral oil as a laxative until 1 month prior to his death. X-rays in February, 1947, and June, 1947, showed patchy areas of consolidation.

Autopsy revealed multiple lung abscesses and lipoid pneumonia.

2. A-127-47, a 51 year old white male, had a stroke 18 months prior to admission. He had a left hemiplegia associated with aphasia and vomiting. The blood pressure was 230/150. He had bouts of fever which were attributed to pyelonephritis. He had received liberal amounts of mineral oil until 12 months prior to his death. There were no X-rays taken after the use of mineral oil. Autopsy revealed the presence of bronchopneumonia and lipoid pneumonia.

3. A-99-48, a 46 year old white male, had a right hemiplegia, was mentally deteriorated and disoriented. He developed gangrene of one leg necessitating amputation.

He received repeated doses of mineral oil while in the hospital until one month prior to death.

The only X-ray taken was on admission prior to the use of mineral oil and was reported as negative.

At autopsy, he had an old massive encephalomalacia. There was lipoid and bronchopneumonia and thrombosis of the aorta.

4. A-120-48, a 59 year old white male, had a left hemiplegia and a speech difficulty. He was operated upon for a hernia, following which he developed a temperature of 104° and died. He had had 5 doses of mineral oil 6 months prior to death.

No chest X-rays were taken after the use of mineral oil, but the one on admission was negative.

The cause of death was bronchopneumonia and lipoid pneumonia was present.

5. A-132-48, an 80 year old white male, had primary carcinoma of the liver with involvement of the cervical lymph nodes. He had been receiving mineral oil as a laxative until 2 months prior to death.

X-ray of the chest revealed linear fibrosis and plate-like atelectasis of the right lower lobe and thickened pleura.

At autopsy lipoid pneumonia was present in addition to the carcinoma of the liver.

6. A-135-48, a 51 year old white male, had a bilateral hemiplegia of 5 years duration. He had difficulty in swallowing and frequent bouts of bronchopneumonia due to aspiration. He died while smoking in bed when he set the bed linen on fire. Mineral oil had been used as a laxative until 6 months prior to death.

X-ray revealed some haziness in the left lower lobe.

At autopsy the cause of death was attributed to the burns. Lipoid pneumonia was present.

Summary

Six cases of lipoid pneumonia due to the use of mineral oil as a laxative are presented.

The lipoid pneumonia itself was not the cause of death in any of the six cases.

The disease is more prone to develop in debilitated, aged individuals who have difficulty in swallowing for various reasons.

Mineral oil, once it reaches the alveoli, remains there indefinitely, only small amounts reach the lymph nodes or can be expectorated. None is assimilated.

If used long enough, mineral oil leads to pulmonary fibrosis, and predisposes to repeated attacks of bronchopneumonia and hastens death.

Discussion

Dr. Thomas N. Hunnicutt, Newport News: It is needless to say I have enjoyed Dr. Baron's paper on this timely subject. The chemists told us about mineral oil first, when they said it picked up vitamin A; then the pediatricians; and now the pathologists.

The development of pulmonary changes in individuals who take mineral oil for indefinite periods of time has been well demonstrated. These patients exhibit remarkably few symptoms, as a usual thing. In advanced cases dyspnea and cough develop, and the patients may have recurrent bouts of respiratory infection. Occasionally a proliferative type of pneumonia develops. This is usually patchy in appearance, but the lesions may become confluent and simulate, as Dr. Baron said, a neoplasm. An important point to remember is that hilar adenopathy is

not present. None of the oil is taken up or absorbed by the lymphatics.

I should like to stress again the importance of examining the sputum in suspected patients, elderly patients or debilitated patients, with the simple paper test or using scarlet-red fat stain.

Another point to be remembered is that faulty swallowing is not essential to the aspiration of so bland a substance as mineral. oil.

The differential diagnosis should include atelectasis, neoplasm, bronchiectasis, congestive heart failure, and non-specific lung fibrosis.

The treatment is usually simple, requiring only the stopping of the taking of mineral oil. However, an associated pneumonitis, pneumonia, or any purulent lung disease will require specific therapy.

I should like to state again that I have enjoyed this timely presentation and warning by Dr. Baron.

Parathion Poisoning.

Parathion has proved so highly efficient as an insecticide or pesticide that its importance economically is apparent and its usage is rapidly becoming widespread in agricultural communities. Unfortunately parathion is highly toxic for man as well as for insect life. It may be handled and applied safely if, and only if, stringent precautions are strictly observed. However, in spite of the emphasis placed on the need for such precautions excessive absorption may occur through relaxation of these precautions or through accidental heavy exposure. Dangerous parathion residues have not been detected on food crops sprayed at the proper stage before harvest. Physicians may be confronted with cases of poisoning from this compound. The management of acute poisoning by a cholinesterase inhibitor is a medical emergency of a type seldom if ever up to this time encountered in medical practice.

Treatment may be effective if atropine grains 1/100 to 1/50 (0.65 to 1.3 milligrams) is given at once and every hour or oftener as needed to keep the patient fully atropinized (mouth dry, pupils dilated). If the lungs have filled before the atropine takes effect, clear the bronchi by postural drainage. Oxygen is then indicated. Morphine is contraindicated. Muscular fatigue and weakness may reach a degree requiring artificial respiration. Following even mild symptoms no additional exposure to parathion or other phosphate esters should be allowed until time for cholinesterase regeneration has been allowed.

Bevin Scolded by Doctors For Shunning Health Plan.

The Associated Press on July 29 made the following announcement from London:

Britain's Socialist doctors scolded Foreign Secretary Ernest Bevin today for not having his operations under the socialized medicine program.

"He is not the only person prominent in the Labor movement who has gone outside the National Health Service," the Socialist Medical Association's Journal, Medicine Today and Tomorrow, complained in an editorial.

Mr. Bevin was operated on for hemorrhoids in mid-April in the Manor House Hospital. He had a second, similar operation early in June in the London Clinic. Neither is a Health Service hospital.

This meant that he paid directly for his hospital rooms and all other medical costs. Anyone in Britain may have an operation, free medical attention and free hospital service under the Labor Government's health program by choosing Health Service hospitals and doctors.

OBSTETRICAL FACTORS IN INFANT MORTALITY*

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Each year thousands of babies are lost through complications of pregnancy and labor that are largely preventable, provided complete and adequate care of the obstetrical patient can be given. Delivery in a well equipped hospital whenever possible is desirable, if infant mortality is to be materially reduced.

The value of good prenatal care in reducing infant and maternal mortality is a universally accepted fact. By good prenatal care, I mean that every expectant mother should have an initial complete physical examination, including pelvic measurements, urine and blood examinations, and a Wassermann test. A complete past obstetrical history to determine any previous difficulty should always be recorded. *This factor is too often overlooked and is of major importance.* A supervised regulation of the mother's general hygiene, the prevention of intercurrent infections, the maintenance of adequate dietary and vitamin intake, and regular prenatal examinations at stated intervals should be carried out. Education of the patient to recognize abnormal symptoms so that prompt treatment of those conditions which directly affect the child, *should be stressed.*

A. Conditions or Factors During Pregnancy

Among this group fall five important factors affecting vitally infant mortality. They are: (1) Syphilis, (2) Toxemias of pregnancy, (3) Prematurity, (4) Erythroblastosis, and (5) Hemorrhage of mother.

1. *Syphilis*: As to congenital syphilis, transmitted to the fetus during pregnancy, it is a well established fact that early recognition of syphilis in the expectant mother and the initiation of appropriate antiluetic treatment before the fifth month of gestation, that syphilis in the newborn is an entirely preventable disease. Therefore, the Wassermann test in every expectant mother should be as routine as the patient's name, address, or age.

Every known syphilitic mother should be treated regularly and vigorously throughout pregnancy and throughout each succeeding pregnancy, regardless of what the Wassermann test might show at the time.

Present day therapy of syphilis in pregnancy with penicillin was recently reviewed by Aran, Barton, and Bauer. These authors state that the results in the Chicago, Baltimore, and Philadelphia groups treated with penicillin were in accord with their own series at the Chicago Intensive Treatment Center. Combined, there were 117 infants delivered with one death and one stillborn—a failure rate of 1.24%. These authors conclude that "of the various drugs which are used in the intensive forms of treatment and which are designed to prevent syphilis, penicillin is unexcelled."

2. *Toxemias of Pregnancy*: Infant mortality resulting from the toxemias of pregnancy can be materially reduced if adequate prenatal care can be given. *Early recognition of toxemias of pregnancy is possible only when regular prenatal examinations at short intervals are made.* Not only should the blood pressure and weight be taken and urinalysis made, but detailed questions to the mother of incipient symptoms should be asked, and the danger signals taught, as so many of these cases feel entirely well until a convulsion strikes them. Infant mortality in the severe toxemias, such as eclampsia is extremely high, so that a reduction in mortality must result from prophylaxis or prevention of eclampsia.

Once toxemia develops, hospital care and the usual method of toxemia treatment should be initiated. Induction of labor after improvement of toxic symptoms occurs may then be carried out in the most conservative manner possible.

3. *Premature Labor*: A great deal can be accomplished to reduce the incidence of premature infant mortality and *prophylaxis here is of prime importance.* Although many premature births are apparently unpreventable, education of the patient to report at once symptoms of premature labor, can aid the physician materially in preventing early labor and in many cases allow the pregnancy to advance to a safer stage of viability. Early recognition and appropriate treatment for premature labor, education of the mother, prevention of toxemias and treatment of syphilis are measures to be carried out. Complete bed rest, the administration of sedatives and

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corpus luteum, increasing intake of vitamins, especially Vitamin E, etc., will often prevent premature birth. The early initiation of proper treatment for toxemias of pregnancy will often result in improvement of the mother and may allow the pregnancy to advance to the stage where the child has a much better chance of survival. Proper control of the habits, physical exercise, diet, marital relations and mental rest will often prevent premature labor. Prevention of serious maternal infections, such as pneumonia, influenza, pyelitis, which often result in, or necessitate premature delivery, can be accomplished to a large extent with adequate prenatal control. Present day therapy with the sulfonamides and penicillin is often adequate to control intrapartum infection which formerly resulted in or necessitated premature delivery. It should here be emphasized that more frequent consultations with the internist, urologist, and the surgeon should be practiced by the attending obstetrician.

4. *Erythroblastosis*: No detailed discussion of this important complication of pregnancy is possible in this review. However, the practice of modern obstetrics places upon the physician the definite responsibility of attempting to prevent this complication, or of treating infants so affected, once they are delivered. This entails much added work and study on the part of the obstetrician and pediatrician, but the saving of an occasional infant, which otherwise would not survive, is well worth the effort. The prevention of immunization in the female, both married and unmarried, by proper control of all blood transfusions, will prevent many infants deaths in later years.

Erythroblastosis fetalis occurs about once in 500 deliveries and in approximately 90% of these cases the mother is Rh negative, and the father and the infant are Rh positive. Mortality is about 55-60 per cent, the prognosis being gravest in the hydropic form.

Tests for the Rh factor should be carried out on all pregnant women. When the mother is Rh negative, the father should also be tested. If he is negative, the fetus will also be. In Rh negative women with Rh positive husbands, tests for Rh antibodies as well as for blocking antibodies should be performed. *This procedure is imperative in the multigravida and in the primigravida with a history of previous blood transfusion.* If antibodies are found, frequent titre determinations should be done from the 6th month on. A rising titre should indicate induction of premature labor, or Cesarean section in certain cases. Induction of labor prematurely, however, is not universally practiced. After delivery, an erythroblastotic infant should be given an immediate blood transfusion of Rh negative blood preferably through the umbilical vein and repeated as necessary. *It is imperative that all Rh negative women requiring blood transfusion, at whatever age, receive only compatible Rh negative blood,* in order that erythroblastosis in her off-spring be prevented.

5. *Hemorrhage*: Hemorrhage in late pregnancy is most commonly due to either placenta praevia or placental separation. In the former condition, treatment is based partially on the type of placenta praevia, and partially on the patient's general condition when diagnosed. All patients who present hemorrhage in late pregnancy should be hospitalized for examination, diagnosis, and treatment. With compatible blood available, sterile precautions always employed and the operating room prepared for action, examination and diagnosis are then carried out. When the diagnosis is established, termination of pregnancy is indicated, due to the maternal risk in most cases, with the most conservative method possible consistent with safety, and preparation completed for immediate blood loss replacement.

Bleeding complications of late pregnancy carry a high fetality and immediate treatment is imperative if fetal mortality is to be reduced. When watchful expectancy is possible and feasible, the infant has a chance of attaining reasonable maturity. On the other hand, severe hemorrhage, especially that due to central placenta praevia or abruptio placenta, must be treated promptly if the infant is to survive. The choice of and the type of treatment, whether conservative or radical, is governed by the diagnosis, the general condition of the patient, and the preparedness of the birth canal for delivery by the vaginal route.

B. CONDITIONS OR FACTORS DURING LABOR

May I stress the fact that proper and conservative obstetrical care during labor and delivery is just as important in preventing fetal death as prenatal care, since "Mother Nature" unfortunately does not always deliver a living child. Delivery in a well equipped hospital under aseptic care is the ideal, but unfor-

tunately this cannot be carried out in all cases.

It is needless for me to stress the importance of careful and constant watching of every patient in labor if infant mortality is to be reduced from those factors during this period. Early recognition of fetal distress during labor is of paramount importance. This requires a close and constant observation of the fetal heart rate during labor and delivery. The rate and irregularity of the fetal heart tones *are not given enough consideration by physicians at the time of delivery,* and this neglect of the prime danger signal increases fetal mortality tremendously, as many babies die in utero during the last few minutes before birth. In such cases, operative and rapid delivery is indicated if the child is to be saved, whereas conservatism and expectant treatment is to be practiced when otherwise possible. Intervention and resuscitation are important factors in obtaining living babies, and these procedures are much more effectively controlled in the hospital than in the home. Proper training of obstetrical nurses in the recognition of the danger signs and changes in the fetal heart tones should not only be stressed but required, since it is often their responsibility to watch patients in labor.

1. *Cord Around the Neck*: After years of study and experience, Schulter concludes that the incidence of cord around the neck is far greater than is ordinarily recognized. The incidence in a series of 225 cases was 38%. Since this condition is a definite causative agent of asphyxiation in utero, the importance of frequent fetal heart determination late in labor is obvious and necessary if many of these babies are to be saved. Evidence of fetal distress late in the second stage calls for immediate intervention and I am sure that I have seen many babies asphyxiated and lost from this cause.

2. *Abruptio Placenta*: Many babies die near the end of labor from abruptio placenta although the fetal heart tones had been good during the first stages of labor. Only the almost continual auscultation of the fetal heart during this stage will detect the danger in time to arrest death by immediate delivery. Recent improvements in the radio amplifying and electric stethoscope have proved this a practical and valuable apparatus, and one which I hope will have a more universal use in the future.

3. *Asphyxia Neonatorum*: Asphyxia neonatorum is a term loosely applied to cases of babies not breathing at birth. The causes of this condition are many, the most common being, (1) prolonged labor, (2) cord around the neck, (3) narcotization of the child from analgesics and anesthetics, (4) cerebral or intracranial injuries, (5) congenital atelectasis, (6) direct birth trauma with edema of the brain, and (7) mechanical obstruction of the air passages. Swanson, in discussing the causes and treatment of asphyxia neonatorum states that the use of carbon dioxide and oxygen mixtures are of great assistance in establishing respiration and he favors a more universal use of intra-tracheal insufflation under controlled pressure. He points out that drugs for stimulating respiration are frequently disappointing. Gentleness in resuscitation is always recommended and the best treatment for asphyxia neonatorum is its prevention. After its appearance, speed in removing the cause is paramount. In all cases, immediate aspiration of the trachea is advisable. I would like to discuss briefly a few of these etiological factors:

(a) *Analgesics and Anesthesias During Labor and Delivery*: Although the relief of both physical pain and mental strain during labor is quite desirable, many babies are lost through the uncontrolled use of modern obstetrical analgesics and anesthesias. In varying degrees all such drugs are respiratory depressants and much care must be exercised in their administration.

The hazard of loss of infant life from the administration of large doses of morphine to the mother late in labor has long been recognized, yet this drug is still widely used. Morphine decreases the sensitivity of the respiratory center to its normal stimulant, CO_2, much more in the newborn than in the adult. Under the best hospital conditions most of these infants are successfully resuscitated, but a deeply narcotized baby delivered in the home may never breathe. This fact should serve as a warning to the use of morphine and its derivatives, *and the time in labor that it is given should always be carefully considered.* Morphine is best administered early in labor and not given near the time of expected delivery. Yandell Henderson, after a study of various hypnotics in labor, believes that morphine or any of its derivatives has no place during labor, as they distinctly delay the initial respiration of the child. On the other hand, a careful study by Clifford has failed to show that the commonly used barbiturates, such as sodium amytal, nembutal, ortal, seconal, al-

lonal, etc., exert a harmful effect on the condition of the newborn infant. I cannot fully agree with that statement, since I am confident that at least some cases of asphyxia and narcotization of the child result from over-dosage of the barbiturate analgesics. Clifford believes that one of the main factors responsible for the large number of asphyxiated babies seen at birth is the concentration of nitrous oxide and oxygen that is used during the second stage of labor. Eastman also warns that the amount of oxygen administered with the nitrous oxide should be kept above 15% and that if it falls below 10% or less, a marked degree of fetal anoxemia results. Therefore, well controlled obstetrical anesthesia is an important factor in reducing infant mortality.

It should be remembered by all those practicing obstetrics that drugs desirable for the use in obstetrical patients are in many respects different from those desirable in surgical operations. In both fields, the prevention of suffering should be as complete as possible without inducing damage, *but, the surgeon deals with only a single patient, the obstetrician with two.* The ideal obstetrical analgesic and anesthesia has, so far, *not been found.*

4. *Birth Injuries*: Deaths resulting from injury during birth comprise a large per cent of fetal deaths. It is a proven fact that birth injury can and does occur in cases of normal, spontaneous and so-called "easy births", apparently resulting from the forces exerted upon the fetal head during labor and delivery. Improvement must result from better training of the operator, more conservatism in operative deliveries and more constant watching during labor. Here prophylaxis is of prime importance, since all available treatment is useless in many cases after the injury has occurred.

In an exhaustive study of intracranial injuries during labor, Kustner found that in a series of 5,958 children born spontaneously, only 228 or 3.8% died during labor or during the first few weeks. The situation was entirely different in the group of operative deliveries. Among 7,319 children in this series, 1,356 were delivered by operative means and 220 or 16.2% died.

Nattrass states that nearly 50% of neonatal deaths result from intracranial injury. Cerebral hemorrhage, tentorial tears and cerebral edema with compression may result. Improper use of obstetrical forceps, with too forceful or too prolonged traction is a common cause. Unnecessary versions and extractions take a high toll of fetal life, especially when insufficient relaxation of the mother is obtained. Breech deliveries in which there is too rapid an attempt to deliver the head often result in intracranial hemorrhage and death. Brander concludes that fetal mortality is higher in breech deliveries in which extraction is resorted, than in manual aid. Consideration of the physical forces and maneuvers in a breech delivery, and the necessity for haste or the advisability of watchful waiting, is the keynote of success. Proper use of the *Piper-after-coming head forceps* in these cases will save many babies who would otherwise be lost. In premature babies, the danger of breech delivery is particularly great and much obstetrical skill and judgment must be exercised to prevent intracranial injury and death.

Improper management and lack of facilities for the proper management of abruptio placenta and placenta praevia result in a high fetal mortality. Careful diagnosis and immediate Cesarean section in these cases in which the fetus is still in good condition is ofttimes the only means of the child surviving. All such cases should be hospitalized if possible.

Finally, it should be mentioned that hemorrhagic diathesis in the newborn as well as other uncontrollable factors, such as congenital anomalies of the heart and brain, occur to cause fetal death in the first few days or weeks of life. However, many fetal deaths can be prevented if patients can receive good prenatal care, if they are properly educated in their own care, if better facilities for birth are provided, and if better and more conservative obstetrical care is practiced. All available controlled studies bear out these conclusions.

At present, it is impossible to obtain the ideal care of all pregnant and parturient patients. However, as physicians, we should strive to attain this goal in order to reduce fetal and maternal mortality to the minimum. It is a challenge to all whose responsibility lies with these patients.

511 Allied Arts Building.

TUBERCULOSIS CONTROL PROGRAM IN A GENERAL HOSPITAL*

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and
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The control of tuberculosis in any hospital embraces two parts. The first concerns itself with the patients and the second with the employees. Neither can be neglected in a successful program.

A survey of patients on the Tuberculosis Section of the McGuire Veterans Administration Hospital at Richmond, Virginia, shows that 28% of them were diagnosed as active or potentially active tuberculosis cases after having been patients on an open ward of some hospital.

Studies of admissions in many general hospitals showed that 13% of patients were admitted with non-tuberculous pulmonary conditions, such as pneumonia, pleurisy and related diseases and were under isolation precautions from the beginning of their hospital stay.

It is obvious that the McGuire group of tuberculosis patients who spent from a few days to several months on an open ward of some hospital before tuberculosis was suspected constituted a serious menace not only to their fellow-patients but also to the employees who served them during this period. Patients are not admitted to the Tuberculosis Section without a presumptive diagnosis of pulmonary tuberculosis.

The Tuberculosis Section at McGuire Hospital is a 200 bed unit serving Virginia primarily. The Alexandria-Arlington area is served by another hospital, while McGuire takes patients from some sections of North Carolina and West Virginia having better rail connections to Richmond. We feel that we have a representative cross section of the diagnostic problems in the adult male population of Virginia, which shows a trend of higher incidence in the elderly white male.

When McGuire VA Hospital was opened about three and one-half years ago, the problem of the undiagnosed cases of tuberculosis was recognized. There have been nearly 25,000 admissions to the entire hospital, which includes medical, surgical, neuropsychiatric and paraplegic services. Approximately 95% of these patients received a chest X-ray at some time during their hospital stay. This did not solve the problem satisfactorily. The most obvious objection was the delay between admission and the report on a chest film. Patients having chest symptoms or physical findings in the chest received chest X-rays rather promptly. The patient with an obvious non-pulmonary disease received treatment for his chief complaint, but the chest film was postponed, though usually done before discharge. This created the hazard of unrecognized cases of active tuberculosis on the open wards. Frequently the lesions discovered on these delayed chest X-rays were minimal shadows which indicated need for clinical study of the patient to determine activity of the disease. Valuable time had been wasted for diagnostic chest studies which could have been done in conjunction with the primary complaint; also the optimum time for treatment of tuberculosis had been lost. Had this treatment been instituted earlier, beds on other services would have been open for other patients.

Studies in other hospitals have shown that 10% of patients with chronic degenerative diseases will develop active pulmonary tuberculosis as their primary diseases progress. In our hospital these patients were receiving excellent chest studies on their first admission. As they remained in the hospital or had multiple readmissions, there was a tendency to presume that the lungs would have no lesions of clinical significance and no further X-rays were ordered.

When McGuire Hospital was opened by the Veterans Administration, employees were necessarily recruited rapidly. The majority of them received no pre-employment chest X-ray. As soon as arrangements could be made, the services of a Virginia State Department of Health photoroentgen chest X-ray

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From the Medical Service, Veterans Administration Hospital, Richmond, Virginia. Dr. Harper has recently been transferred to Mountain Home, Tenn.

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unit was obtained. Ninety-seven per cent of the employees were X-rayed. One per cent of these employees were found to have lung lesions which did not require hospitalization, but which did require observation at regular intervals. This routine annual chest X-ray on all employees increased this group to 1½%. The hospital at all times furnished a liberal chest X-ray study to any employee having symptoms suggestive of tuberculosis. This policy over a three and one-half year period had discovered 16 cases in which the employees have received compensation and hospitalization for tuberculosis contracted in line of duty. Occupational breakdown of these 16 cases follows: Physician—1, Nurses—6, Ward Attendant—7, Mess Attendant—1, Janitor—1. Five of the 16 were working on Tuberculous Section at time of breakdown; however, 10 of 16 had varying amounts of service from one day to several months prior to discovery of lesion. Only one case developed positive sputum while on duty; two others developed positive sputum several months after leaving employ of hospital. Of the remaining cases 5 had re-infection tuberculosis with negative sputum; 5 had primary lesions with no sputum; 2 had generalized glandular enlargement; 1 undetermined fibrosis treated as minimal re-infectious type.

Statistically an annual rate of 3.4 per 1,000 hospital employees is not considered excessive, although it is twice as high as that seen in industry and the equivalent of rates observed in dangerous trades such as mining. Out of this group 8 of the 16 are now employed, 3 more should be ready for work by 1950, 2 are recently discovered minimal asymptomatic cases that are being treated with bed rest, and 3 are advanced lesions with doubtful prognosis.

With this picture in mind, it was decided to intensify the Tuberculous Control program and in May, 1949, a more intensive tuberculosis control program was evolved. It was new to the Veterans Administration, but not unknown, especially in the Midwest. Our plan is closely patterned after that of the University of Michigan Hospital, where we were allowed to inspect their facilities, review their records and study their published and unpublished data. The program revolves around a Tuberculosis Control Officer who has the responsibility for the control of tuberculosis in patients and employees of the entire hospital. The control officer must be a physician with knowledge of the epidemiology and clinical aspects of tuberculosis. He will need a clerical assistant.

Full cooperation with and by the X-ray Department of the hospital is necessary.

A photofluorographic X-ray unit of the 70 mm. role type film is located in the Admission Office, so that all patients passing through this department will surely receive a chest X-ray. This type of X-ray equipment added to the standard equipment provides the saving in time and cost to enable the hospital to provide the volume of work in this program.

The Admission Office is conveniently located in the hospital so that it is easily accessible to all employees. The personnel officer refers all employees to this office for pre-employment and terminal X-rays. This equipment is also used to provide annual chest X-rays for all patients and employees. The food handlers and the employees on the Tuberculosis Service receive chest X-rays every six months.

The X-ray Department furnishes an X-ray technician who makes about 60 examinations per day. At the end of the working day the technician removes the camera from the machine, processes the films, and replaces the camera so that patients admitted at night may be X-rayed. The following morning at eight o'clock the films are read jointly by the roentgenologist and the tuberculosis control officer. When clinical judgment indicates, a 14 x 17 film and clinical studies are done at once.

All patients showing X-ray lesions suspected of being tuberculous are immediately discussed with the chief of his service by the Tuberculosis Control Officer, and the patient's clinical findings are reviewed and the patient is examined by the Control Officer. The necessary isolation precautions are immediately instituted. To be effective there must not be a lapse of over 24 hours between admission and interpretation of films. Adequate provision for isolation of the suspicious patient must be provided until a definite diagnosis is made.

The advantage of this control program where responsibility for early case-finding and immediate action rests with one person, the Tuberculosis Control Officer, is: A regular schedule for every patient and employee so that he gets—

a. Immediate admission and re-admission X-ray of chest.
b. Tuberculin testing of employees on employment, and, if negative, re-testing on return for X-ray.

No employee with negative tuberculin is employed on the Tuberculosis Section.

c. A program of regularly scheduled X-rays on chronic patients and a consultation by the control officer with the ward chief on every patient having any abnormalities of the chest.

d. Re-X-ray of all patients and employees annually or semi-annually or more often, if indicated.

e. Report of X-ray findings by T. B. Control Officer to the employee, with sufficient time for interview and history and clinical examination if indicated.

These measures result in a uniform control policy throughout the entire hospital, early case finding, education of employees in tuberculosis control, and protection of employees and patients from unsuspected exposure. Economically the cost is low, and the saving in compensation cases alone is expected to pay the major portion of the cost.

Discussion

Dr. Samuel Richman, Richmond: This presentation is in direct line with the steady advance of medicine in an attempt to detect disease in its early stages and thus produce a greater number of cures.

It should be emphasized, however, that a photo-roentgen film is only a survey procedure. That is, it is a practical and economical method of picking out those individuals with some abnormality in the chest. What that abnormality is, usually remains to be determined after the patient has been examined by the usual 14 x 17 film, fluoroscopy, and/or with any other roentgen diagnostic measure deemed necessary by the roentgenologist. To dismiss an individual because no abnormality can be seen in a photo-roentgen film, when some abnormality really exists, is very rare, even though it may occur to the most experienced physician. However, it may also be serious to diagnose an abnormality when no such lesion exists. One must also scrutinize carefully the hilar regions for lymph node enlargement.

The figures presented by Doctors Harper and Roye in respect to the number of patients found to have tuberculosis in the lungs are in very close correlation with the recent report of the Public Health Service of a survey made in the State of Minnesota. In that state, of 300,000 films (70 mm.), 97% were found to be normal; 2% suspected of tuberculosis; and 1% of other diseases. Eight thousand and three hundred patients with an abnormality in the chest were re-examined by means of 14 x 17 film, and of these, 28% were normal and 46% were thought to have some form of TB. Of those patients suspected of TB, 85% were found to be of the minimal type, 13% moderately advanced, and 2% far advanced.

In a general hospital, one of the greatest services a photo-roentgen film offers is in almost immediate isolation of the active tuberculous patient from his fellows in the ward. Ordinarily, a chest film in the X-ray Department in this case would have been delayed until the stomach X-rays were done because this patient's symptoms were referable only to his abdomen. In fact, X-ray examination of the stomach does reveal a large defect which is probably due to a far advanced carcinoma. Since it takes several days, except in emergencies, before a stomach X-ray examination can be done because of the large number of patients scheduled in advance, this particular patient, in the meantime, could have been infecting the others in the ward with the tuberculous organism. An immediate photo-roentgen film upon admission into the hospital obviates this possibility.

Finally, the fact that one has serial follow-up of the patients by means of photo-roentgen or any other film should not lull one into security and have him forget his medical judgment and training.

Dr. W. F. Wagner, Richmond: Productiveness of case-finding through routine screening by x-ray of all employees, staff members, and patients in general hospitals is widely recognized—incidence of positive cases being uniformly higher among the 16,000,000 persons who pass through our hospitals each year than is found in the general population. Plans for encouragement of this particular type of group survey are included in the State Health Department's tuberculosis eradication program.

Indeed gratifying to note is the interest exhibited by the Veterans' Administration in this method of case-finding described for us by Doctors Harper and Roye in their excellent paper. The splendid example being set by the McGuire Hospital should do much to focus attention and to stimulate interest in this valuable procedure in other parts of the Commonwealth. The State Health Department is more than pleased to help expedite the program at the McGuire Hospital hy temporary loan of equipment.

Every community-wide, or state, tuberculosis control program, to be effective, must be well-balanced. Prompt x-ray screening of all hospital admissions and employees unquestionably helps to round out a program and to give that balance.

Also of paramount importance in every formal plan for eradication of tuberculosis is the providing of adequate facilities for treatment. This naturally includes making available a sufficient number of beds to meet the needs of all who are recommended for sanatorium or hospital care. *Early diagnosis* and *adequate treatment* go hand in hand.

Series after series of individual case reports have proved beyond doubt that comparatively few persons have ever succumbed to tuberculosis *per se;* most of those who have failed to get well have done so because of belated, half-hearted, or misdirected efforts to get well. At least 90% of patients diagnosed reasonably early, with or without symptoms, who, during course of treatment, consistently do the right things at the right time and long enough, cannot help but get completely and permanently well.

Accordingly, a chief role of health departments and public health nurses is to assist physicians to achieve this objective in as many instances as possible, for with every

successful "instance" a life will be saved.

To accomplish this goal, individual patients, and their families and friends, will require instruction in basic facts of tuberculosis and its principles of treatment. The public as a whole will need specific orientation. Someone has said, "The trouble with most people is not so much what they don't know as what they do know that isn't so!" Probably in no other disease is this more true than in tuberculosis. Presentation of basic facts can best be tied in with promotional campaigns which precede and run concurrently with high percentage community mass x-ray surveys.

Intelligent consideration must also be given, combined with substantial relief, of emotional, social, domestic, and financial problems which beset the average patient, particularly those who have dependents and who require hospitalization. Many patients in the past have been unable to meet these problems successfully, not always because they themselves were "delinquent," but because the community in which they lived was derelict in its duty.

In brief, one might say that treatment of tuberculosis is simple; the real problem is treating the people who have it—their friends and relatives—*all* problems of patient management.

But it is for this very reason, that is to say, the conviction that so much *can* be done about early diagnosis, education, financial subsidy, rehabilitation and other important aspects of patient management that the State Health Department has proceeded with its current intensive program of case-finding and education based upon a philosophy of optimism which it hopes will be "catching."

Finally, I should like to say a word about hospitalization of the tuberculous in Virginia. As most of you know, the State Health Department is embarked upon an alteration and expansion program for its sanatoria which will increase facilities for infirmary patients between three and four times. This, combined with the prevailing rapid decline in death rate, we *hope* will prove adequate to isolate all chronic shedders of tubercle bacilli, and to provide appropriate treatment for all persons with tuberculous lesions for whom satisfactory treatment cannot be obtained other than in a sanatorium.

There is complete unanimity of opinion that most if not all of those who exhibit symptoms of tuberculosis, in addition to x-ray or laboratory findings, should be hospitalized as soon as possible.

Whether every active minimal case, discovered through x-ray survey of apparently healthy persons, without symptoms of any kind, likewise requires categorical hospitalization is a moot question.

Six out of ten cases of manifest tuberculosis uncovered in the average community x-ray survey are designated as "apparently healed" or "apparently arrested" at the time of their first x-ray, as comfirmed by completion of standard diagnostic studies, that is to say—they have already demonstrated a capacity to heal without treatment—without ever knowing that they, at one time, had the disease in an "active" form.

No one knows as of this date, in any state or community, how large the need for hospitalization will eventually prove to be for the remaining four. Naturally, predictions vary widely. There is considerable divergence of opinion even independently of significant qualifying factors, such as the existence or possibility of development of adequate facilities and trained personnel to care for this group outside a sanatorium, an indispensable alternative if the cases are not to be hospitalized. Opinions differ as to what extent appropriate facilities and personnel can be made available at strategic points throughout the state.

In the absence of convincing proof to the contrary and in the light of considerable sound argument in the affirmative, the State Health Department has preferred to adopt an optimistic approach, which is, in brief, and towit, "many if not most patients in this group need never require hospitalization." To support this philosophy, the State Health Department must, and does have much faith in the physicians of this state; it has much faith in the lay public. It believes that between them, they will help us to take care of the many "ifs" and "ands" that are involved, which ultimately must be resolved.

Moreover, it is felt that the publicizing of this philosophy will furnish an additional, powerful and perfectly legitimate incentive to persons to participate in mass x-ray surveys, thus greatly expediting identification of every case of tuberculosis within the state.

On the other hand, the Health Department is only too keenly aware that such teaching must be balanced by equally emphatic and concurrent instruction of the public on the wisdom of carrying out the recommendations of their attending physicians combined with determined effort—and I mean *determined* effort—on the part of every public health worker to secure placement for every case of tuberculosis for whom hospitalization has been recommended. It is the belief and policy of the State Health Department that the attending physician is the one who must decide *in every instance* which case should be sent to a sanatorium, "no question will be asked by us", "ours is not to reason why." This is our pledge. In turn, we solicit the whole-hearted support of the medical profession for our program, to the end that through cooperation of *all* parties a common objective may be the more quickly attained.

Again, I wish to thank Dr. Harper and Dr. Roye for their most interesting paper and to assure them of the State Health Department's continued sympathetic support in their case-finding program.

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia
and the
University of Virginia Hospitals.

Harry Walker, M.D., *Editor*
William Kay, M.D., *Associate Editor*

Case No.: B-82531

This 70 year old colored male was admitted to St. Philip Hospital February 14, 1950, with the chief complaint of "head feeling bad". His previous admissions to St. Philip Hospital were in 1938 because of multiple fractures of the ribs from which he recovered spontaneously and in 1944 because of right indirect inguinal hernia and hydrocele. His present illness began about two weeks before entrance to the hospital, at which time he developed a "bad feeling in his head" followed by anorexia. He stated that there had been no nausea or vomiting. He then began to have slight shortness of breath accompanied by a chronic, nonproductive cough. There was no hemoptysis or chest pain. The patient denied swelling of the ankles, fever, or chills. He grew progressively more nervous and weak and became unable to care for himself. He was then seen by the doctor from the Home Care Clinic on the night previous to admission and at that time his temperature was 101.6°. He was given 1 ampule of crysticillin intramuscularly and when seen on the next day he was referred into the hospital.

Review of systems revealed that the patient had been incontinent of urine for about two years, but there were no other significant details.

Physical Examination: Temperature 100°, pulse 100, respiration 22, blood pressure 96/68. The patient was a well developed, fairly well nourished, colored male lying propped up in bed in a somnolent state and very uncooperative. The skin was hot and moist, there were excoriations on the scrotum which were assumed to be due to urinary incontinence. The mouth and pharynx were negative except for the accumulation of white mucus and dehydration. There was no neck vein distention and the thyroid was not palpable. The chest was symmetrical and the lungs contained numerous moist rales at the left base posteriorly and laterally and diminished breath sounds at the left base. There also appeared to be diminished resonance in the left chest posteriorly. No friction rub was heard and the apices sounded clear. The heart was enlarged to the left, but the sounds were of good quality and there were no murmurs. Peripheral pulses could not be felt in the feet. The abdomen was not remarkable and there were no palpable organs. There was no cyanosis or edema of the extremities. Reflexes were within normal limits.

Laboratory Examination on admission revealed an essentially negative urine with specific gravity 1.017. The red blood count was 5,920,000, hemoglobin 13.5 grams, white blood count 6,100 with 74% polymorphonuclear leukocytes. Serological test for syphilis was negative, NPN was 28, blood sugar 110, CO_2 combining power 26 mEq/L. Serum sodium 126 mEq/L, serum potassium 4.9 mEq/L, serum chlorides 92 mEq/L.

Admission impressions were that the patient had pneumonia and urinary incontinence. He was started on penicillin and on the day following admission, it was felt that he had auricular fibrillation and he was digitalized orally. On the second hospital day the fibrillation had apparently disappeared and an electrocardiogram showed a sinus tachycardia with left axis deviation, and this was confirmed four days later. He appeared to be very somnolent and because of the low serum sodium, he was given 5% sodium chloride by vein. The patient's temperature ran a spiking course, ranging from 100° rectally on admission to 102.8°. The pulse rate continued elevated. Because of the patient's somnolence, a lumbar puncture was done and this showed a very low initial pressure of 40 mm. of water. Jugular compression on the right caused a prompt rise in pressure, but compression on the left caused no change in pressure. The fluid was faintly xanthochromic. Spinal fluid chemistries were normal and only one cell was seen. Routine agglutinations and blood cultures were negative. A spinal fluid culture was negative. Tuberculin and histoplasmin skin tests were negative in 24 hours. X-rays of the skull and mas-

toids were not remarkable. A neurosurgical consultant stated that he did not believe the patient had a subdural hematoma or brain abscess.

Six days after admission to the hospital, the patient was started on streptomycin and penicillin was discontinued. His spiking fever persisted and he was given glucose in triple chlorides with added potassium chloride by intravenous injection. On the day of death the patient was started on aureomycin. He died ten days after admission to the hospital.

DISCUSSION BY DR. WILLIAM ANDERSON*.

The case for discussion today is that of a 70 year old colored male who was admitted to the hospital in February of this year. The patient's age has significance, first of all, in that certain diseases such as neoplasms and degenerative processes particularly of the blood vessels are common at this period of life. His race and age should make one cautious in evaluating the history since histories obtained at St. Philip are notoriously inaccurate and unreliable. The patient's sex should make one alert for evidence of such diseases as cancer of the lung or prostate.

According to the protocol the chief complaint was "feeling bad" in the head. Just what the exact nature of this complaint was, it is impossible to say. This "bad feeling" may have meant headache, dizziness, or mental confusion. We have no definite statement anywhere in the history as to just what this chief complaint was. However, it is not unusual for members of the colored race to describe pain vaguely or as a "misery", and so it is not unlikely that this patient's complaint was actually headache. At any rate the complaint seemed to be localized to the head.

We are next told that there was a past history of hospitalization in 1938 at the age of 58 because of multiple fractures of the ribs, and again in 1944 for operative repair of a right inguinal hernia and hydrocele. I cannot see that these facts have any particular bearing on the present problem.

The present illness, we are told, began two weeks before admission to the hospital. Although this is given as a definite statement of fact, I still feel that the exact duration of this period is uncertain. The patient may have been sick much longer than two weeks. The onset was characterized by a "bad feeling" in the head plus loss of appetite but no nausea or vomiting. Sometime after this, I do not know exactly when, the patient became aware of slight shortness of breath. We are not told whether this was present at all times or whether it was present only on exertion. About this same time he also noted a chronic dry cough. We immediately begin to think of diseases which may cause shortness of breath and cough. Possibly heart failure was beginning at this time or was it a condition primarily in the lungs and causing irritation of the bronchi with cough and interfering with oxygenation of the blood, producing dyspnea.

It is stated next that the patient had had no edema, which does not help very much in ruling out heart failure since edema is usually not present until right sided heart failure takes place. We are also told that the patient had no fever, but this, I think, must be disregarded since I am sure that he had not taken his temperature, and subjective feelings of the presence or absence of fever are often misleading. It is said that the patient had no chills and I think this statement can be accepted, and it probably is significant and would be a good argument against the diagnosis of lobar pneumonia. We are also told that the patient had no hemoptysis or chest pain. I do not see that this rules out anything much. The time relations are still very vague but apparently the subject of our discussion grew progressively "nervous and weak and unable to care for himself". To many colored people the term nervousness means trembling. We have no clue here as to whether this patient developed a tremor or whether his nervousness was merely a subjective feeling of anxiety and apprehension. Furthermore, it is not stated whether the weakness was generalized or localized. I assume it to have been generalized. After two weeks of illness he was seen by the Home Care Doctor on the night prior to admission and at that time was found to have a temperature of 101.6, which I presume was an oral recording. At any rate, it is now definitely established that this illness was a febrile one. The patient was given one ampule of crysticillin and was admitted to the hospital the following day.

The review of systems revealed that the patient had been incontinent of urine for two years. No indication is given here, nor is any evidence presented in the remainder of the protocol as to whether this incontinence was true incontinence or whether it was

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the incontinence of retention. In view of the patient's age and the likelihood of benign hypertrophy of the prostate, I would assume that it was due to retention.

No family history is given and it probably would not be of much value if it were since few negro patients have any accurate information on the causes of death of other members of their family.

Nothing is stated regarding the habits of this individual as with respect to alcohol, tobacco, drugs, etc.

Neither is his occupation given. This might possibly have been of some help in the diagnosis.

It might be well at this point to stop and summarize the information that we have gathered so far. We have a 70 year old colored male with a negative past history, who has been sick for two weeks or more—the onset having been gradual and the first symptoms noted having been a "bad" feeling in the head associated with loss of appetite but no nausea or vomiting. Dyspnea and dry cough had been noted, but no edema or chills and no hemoptysis or chest pain. He became progressively nervous and weak and had a temperature of 101.6 on the day before admission.

After coming to the hospital the following facts were noted: Temperature 100, but not stated whether this was oral or rectal; respiration 22, which is normal; blood pressure 96/68, which is rather low but has uncertain significance, since no other recordings were given and we do not know whether this low blood pressure persisted. The hypotension if present could have resulted from a decreased blood volume from dehydration and hemoconcentration, evidence for which we find later on. The patient was well developed and fairly well nourished. I take it that the "fairly" means he was certainly not obese and that he may actually have been off a little in his weight. At any rate, he did not show evidence of a long drawn out chronic wasting disease. The patient was propped up in bed—was this because of orthopnea, or did he just want to sit up so he could see what was going on. He was somnolent and uncooperative; in the absence of any previous sedation, this may have meant that he was suffering from a disease of the brain, or on the other hand, that a disease such as an infection elsewhere in the body was effecting the cerebral cortex secondarily. His skin was hot and moist which is further evidence for the febrile nature of his illness. Excoriations were present on the thighs and these were attributed to the urinary incontinence. The mouth and pharynx contained mucus which may have been a result of the patient's weakness and inability to expectorate this material. The mouth and pharynx also showed evidence of dehydration. There was no neck vein distention and the thyroid was not palpable. At this time we would like very much to know whether the neck was stiff, but the status of this point is not given. Neither is anything stated regarding the intactness of the cranial nerves, and conspicuously absent is any statement regarding the ophthalmoscopic examination of the eye grounds. Specifically, was there papilledema or not? Examination of the chest is more informative. At the left base, and only on the left, posteriorly and laterally were heard numerous moist rales—the breath sounds also were diminished in this area—and so was resonance diminished here. No friction rub was heard and the apices were clear, which does not rule out tuberculosis. At last we have something objective in the way of physical signs on which to speculate. We are now confronted with determining the nature of the disease in the lower lobe of the left lung. The rales indicate a fluid exudate in the air passages and alveoli. Heart failure seems an unlikely cause for this since it is limited to one side; however, this fact alone does not rule out heart failure. The diminished breath sounds could be the result of fluid in the pleural cavity, but if there were much fluid, the breath sounds would more likely have been absent than merely diminished. Thickened pleura as in old tuberculosis pleuritis could cause a diminution of the breath sounds. Partial obstruction of the bronchus from a bronchiogenic carcinoma or from inflammatory narrowing of the lumen might also be the explanation for this phenomenon. At any rate it is significant that nothing was said about the breath sounds being bronchial in character, and with the absence of this finding it is surprising that a diagnosis of pneumonia was made later. On the basis of these findings I do not think that inflammatory consolidation was present. There was diminished resonance—not flatness, just *diminished* resonance. Therefore, pleural fluid was not present in any great quantity. This finding of diminished resonance may have been due to either a thick pleura or to some sort of solidification of the lung parenchyma.

Bronchial obstruction with atelectasis could explain the chest findings, as also could thick pleura with adhesions and a subpleural pneumonitis. The "heart was enlarged to the left". How was this determined? Was it based on the position of the apex impulse? If so, it may be erroneous as the heart may have been shifted to the left because of atelectasis. However, no mention is made of the position of the trachea in the neck. Chest x-rays were taken and in view of these results we certainly must consider the diagnosis of a disease which would cause a generalized inflammatory process in both lungs, involving the bronchi as well as the parenchyma. The heart sounds were of good quality and no murmurs were heard. Peripheral pulses were not palpable in the feet—which is not particularly unusual for a 70 year old man. No cyanosis or edema was noted. The reflexes were within normal limits. The abdomen was not remarkable and there were no palpable organs. No mention is made of a rectal examination or of the condition of the prostate gland.

Now we come to the laboratory work. The urine was normal. The red blood count was nearly 6,000,000 and the hemoglobin 13.5 grams. The latter is slightly low and the former slightly high. The probable explanation is dehydration in a slightly anemic individual. The one and only white blood count given us was 6,100, presumably done on admission. The differential showed 74% polys, which is normal. However, the total count of 6,100 in a febrile illness seems to me to be particularly significant and tends to narrow the field of possible etiological agents considerably. The serology test was negative. The NPN was 28 which is surprisingly low for the amount of hemoconcentration he had. The blood sugar was 110 which is normal. The CO_2 combining power of the blood was 26 mEq/L per liter, which also is normal. Certainly diabetes does not enter into the picture. The serum sodium and chloride were low being 126 and 92 mEq/L respectively. The potassium was normal being 4.9 mEq/L. An attempt to explain the hypochloremia and hyponatremia seems to be in order. One of the most common causes, of course, would be loss of these electrolytes through the gastro-intestinal tract from vomiting or diarrhea, but this was not the cause in this case. Advanced renal disease may sometimes be accompanied by low values for sodium and chlorides but certainly this patient did not have significant renal disease. Diabetes with acidosis is a frequent condition in which low sodium and chloride are seen, but this patient was not diabetic. Addison's disease or adrenal cortex insufficiency will result in very low sodium and chloride but in this condition the potassium is high, which was not the case in our patient. Excessive sweating after dehydration with water of low salt content will result in low sodium and chloride levels, and this may have been a factor in the case under discussion since it is noted that he was sweating. However, the most likely explanation would seem to lie in the fact that certain infectious diseases are unexplainably accompanied by depressed values for sodium and chloride, namely, pneumococcic pneumonia, meningitis, and to a less extent in typhoid fever, tuberculosis, and others.

The patient was thought to have pneumonia and was put on penicillin. On the second hospital day it was thought that he had auricular fibrillation, but it was not stated whether this was based on electrocardiograph findings. It seems certain, however, that the patient did develop some irregularity in his heart rhythm—conceivably this might have been due to frequent premature beats which sometimes give the impression of a completely irregular rhythm. Anyway the patient was digitalized. The next day the irregularity had stopped and an electrocardiogram showed a sinus rhythm and left axis deviation. Even if auricular fibrillation had been present transiently it may have merely represented increased irritability of the auricles secondary to disease elsewhere in the body and not due to any intrinsic heart disease. We should say, however, that a patient of this age is very apt to have coronary arteriosclerosis and I will not be surprised to find some at autopsy. The left axis deviation may have been due to hyperthrophy of the left ventricular, but more likely it was due to the position of the heart, particularly if there were shift of the heart toward the left from atelectasis. The patient was very somnolent—this statement was made several times in the protocol, so we will do well to keep it in mind in making the final diagnosis. He was given 5% NaCl intravenously because of the low sodium and chloride. We are not told what effect, if any, this had on the patient's general condition. His temperature continued a spiking course—up to 102.8 with the pulse concomitantly elevated—this in spite of penicillin, which begins to make us wonder if the fever was due to some peni-

cillin resistant agent such as the tubercle bacillus.

A lumbar puncture was done. The initial pressure was low—40 mm. of water—the normal being 70-200 or an average of 125. If this were a true reading and not due to faulty technique, such as a clogged needle or too small calibre needle, it might be due to the decreased blood volume consequent to the dehydration. Another possible cause might be an obstruction to the cerebral spinal fluid. The Queckenstedt gave normal results on the right, but on the left, jugular compression would not elevate the cerebral spinal fluid pressure. This observation usually means an obstruction in the jugular vein or in the lateral sinus. However, as we shall later see, we have none of the other signs of lateral sinus thrombosis. The fluid was faintly xanthochromic, which usually indicates the presence of old hemorrhage in the cerebral spinal fluid, but the fluid in the tuberculous meningitis may also present a slightly yellow appearance. The chemistries of the spinal fluid were normal—I take it that this means the protein level was normal as well as the glucose, and chloride. In view of the gross appearance of the fluid this statement comes as right much of a surprise. Only one cell was seen. This with the normal protein would almost rule out an inflammatory process in contact with the cerebral spinal fluid. Culture of the spinal fluid was negative. I suppose this was just a routine culture and did not include culture for acid fast bacilli.

Agglutinations and blood cultures were negative.

Tuberculin and histoplasmin skin tests were negative at 24 hours. We would like to know what dilutions of the tuberculin were used and what the results were at the end of 48 hours. I think it would be a little unusual to find a negative tuberculosis in a colored man, age 70. However, if it is true, it means that either the man did not have tuberculosis or else that he was in an anergic phase, as sometimes happens in far advanced disease, or in miliary tuberculosis.

X-rays of the skull and mastoid were negative. Thus, we have no evidence of skull metastases or of a mastoid focus for the spread of an infection into a lateral sinus or the meninges.

A neurosurgical consultant found nothing to support the diagnosis of subdural hematoma or brain abscess. Unfortunately we are not told what he thought about the possibility of a metastatic tumor in the brain or of a tuberculoma.

Six days after admission the patient was taken off of penicillin and put on streptomycin. Was this because he was thought to have tuberculosis, and if so why, or was it simply because he was not getting better and it was deemed wise to try a different plan of attack? At any rate, the spiking fever persisted and on the tenth day he was started on aureomycin, but later on the same day the patient died. No clue is given as to the manner of death, whether it was due to some dramatic accident in the body, or just simply the result of a slow progressive downhill course, finally culminating in death. Probably the latter was the case, since otherwise, more details would probably have been given.

I think it wise at this stage to stop and briefly summarize the pertinent information so far obtained. We have here a 70 year old colored man whose illness lasted a total of 24 days and which (1) affected his head—as evidenced by a "bad feeling" in the head, nervousness, somnolence, uncooperativeness, low spinal fluid pressure, xanthochromic spinal fluid, and a questionably positive Queckenstedt on the left, (2) affected the lungs as evidenced by dyspnea, dry cough, moist rales in the left base with diminished breath sounds and resonance, and the changes seen on x-ray, (3) caused a spiking temperature which did not respond to penicillin, or streptomycin (during the 4 days it was given), (4) accompanied by a low white blood count with normal percentage of polys, (5) accompanied by a low serum sodium and chloride. The incontinence, I believe, was a separate process and was probably due to retention of urine most likely on the basis of benign hypertrophy of the prostate—or possible stricture of the urethra. Also, I do not believe that the heart played a major role in the patient's illness.

Let us consider then some of the diseases which might form a possible basis for an illness such as this patient had. Certainly with fever and a clinical course such as this, one must think of various inflammatory processes. The Queckenstedt was positive on the left—did the patient have a lateral sinus thrombosis? I think not. The mastoids were normal; there was no leukocytosis; the cell count in the spinal fluid was normal; the blood culture was negative; and there was no response to antibiotics.

Brain abscess may be accompanied by fever which

is resistant to antibiotics, and present a picture of somnolence and a steady downhill course. Localizing signs may be entirely lacking. So I think that this diagnosis cannot entirely be ruled out. However, we have no evidence of increased intracranial pressure, no pus cells in the spinal fluid, and brain abscess does not usually cause xanthochromic spinal fluid.

To explain the old hemorrhage in the spinal fluid we have no history suggestive of any kind of vascular accident either in the brain or in the subarachnoid space. A subdural hematoma would not explain the fever, and furthermore there is no history of trauma to the head, no lucid interval, no increased spinal fluid pressure, no dilated pupil, no focalizing signs, and no bradycardia.

To explain this man's illness it seems necessary to postulate a disease which would effect both the lung and brain. Spread of disease from the brain to the lung being far less common than the reverse, it would seem more logical to attempt to establish the nature of the process in the lung first. Fever and rales certainly suggest a pneumonitis. Resonance was diminished, but the breath sounds were not bronchial; this with the general clinical course and lack of response to penicillin would certainly eliminate ordinary lobar pneumonia. The history of a dry cough is not the history of bronchiectasis. No sputum and no odor to the breath would not suggest lung abscess. The excoriations on the thigh might possibly have actually represented the portal of entry for a fungus such as blastomycosis which later involved the lungs and central nervous system, but I can find no further support for such a postulation. In considering the various specific systemic infections, among those of viral origin only psittacosis and encephalitis need be mentioned. However, there is no history of exposure to diseased birds and nothing else to back up a diagnosis of the former. Encephalitis might be accompanied by more neurological signs and would not explain the pulmonary phase of the illness. There is no skin rash to suggest a Rickettsial disease. The low white blood count and lack of response to penicillin would be against a diagnosis of infection with any of the pyogenic bacteria. There is no lymphadenopathy, no primary lesion, and no pneumonic consolidation to suggest tularemia. The presence of lung involvement, the absence of joint complaints, and the short course of the illness would rule out brucellosis. The negative serology test for syphilis and the absence of any of the usual lesions would eliminate an infection by spirochaetes. Among the parasites malaria might be considered but the absence of chills, enlarged spleen, and rhythmicity of the fever would be against this. There is no arthritis, heart murmur, polyserositis, or skin rash to suggest any of the collagen diseases. No masses or pulmonary densities to suggest Hodgkin's disease. This leaves us then with two important diagnostic possibilities: tuberculosis and carcinoma.

Bronchiogenic carcinoma will go far toward explaining many of the phenomena observed in this patient. This disease often causes bronchial obstruction with resultant decrease in breath sounds, atelectasis and pneumonitis behind the obstruction, thus explaining the decreased resonance and the fever. Bronchogenic carcinoma is a common source of metastatic tumor in the brain, and the latter is often associated with xanthochromic spinal fluid, with little change in the spinal fluid protein and cell count. Strategic location of such a metastasis might possibly explain the results of the Queckenstedt test. The only objections to this diagnosis would be the lack of response to penicillin and the absence of suggestive findings on chest x-ray.

A fever, unresponsive to penicillin, accompanied by a low white blood count, with rales in the lung, a steady downhill course characterized by weakness, nervousness, and somnolence certainly could be due to pulmonary tuberculosis with terminal spread to the central nervous system either by hematogenous dissemination or by breakdown of a focus already present in the brain, e.g., a tuberculoma. The diminished resonance and breath sounds could be due to a thickened pleura. The low serum chloride is sometimes found in tuberculosis. The faintly xanthochromic spinal fluid is sometimes seen in tuberculous meningitis. The course of 24 days duration is a little short for this disease but not impossible. On the other hand, we have a negative tuberculin test (assuming that sufficient strength and quality of tuberculin was used in the test), but this does not rule out tuberculosis entirely since the patient may have been in the anergic phase. Acid fast bacilli were not reported in the sputum, but this was doubtless due to the fact that no sputum was obtainable, which is sometimes the case in tuberculosis. Normal spinal fluid chemistries and cell count with no pellicle in the fluid would seem to be almost insur-

mountable obstacles in the diagnosis of tuberculous meningitis, unless we assume that the lumbar puncture was done so early in the disease that this reaction had not taken place in the spinal fluid. Nothing is said about signs of meningeal irritation and it is indeed difficult to see how tuberculous meningitis could be present without some of these signs. Without the chest x-ray I think that tuberculosis is possible as a diagnosis here, but the weight of the evidence is against it. However, since the roentgenologic evidence for a generalized pulmonary inflammatory process is so great, it would seem that the most likely diagnosis is pulmonary tuberculosis with scattered small areas of tuberculous pneumonitis, probably with a hematogenous spread and miliary lesions in many organs of the body, including the brain and meninges, this in spite of the absence of spinal fluid confirmatory findings. A tuberculoma of the brain may be present.

Hospital diagnosis: (1) Bronchopneumonia. (2) Generalized arteriosclerosis.

Dr. Anderson's diagnosis: Pulmonary tuberculosis. Accessory diagnoses would probably be: (1) Generalized arteriosclerosis particularly of the aorta and possibly of the coronary arteries. (2) Benign hyperthrophy of the prostate gland.

Pathological report: Dr. Robert K. Waller*.

The heart weighed 340 grams. The epicardium was markedly thickened over the right ventricle and adherent to the pericardium at the apex. Myocardium at the base of the left ventricle measured 20 mm. and at the base of the right, 5 mm. Valve circumferences were 80 mm. aortic, 105 mm. mitral, 135 mm. tricuspid and 85 mm. at the pulmonic valve. There were few atheromatous deposits at the base of the mitral valve. The other valves were not remarkable. At the apex of the left ventricle there was a ballooned out area measuring 60 mm. across to the inner surface of which a yellowish red blood clot was adherent. The underlying myocardium was markedly thinned, fibrotic and calcific. Surrounding this lesion, which encroached on the septum from the left, the endocardium was thickened. The coronary ostia were patent. 15 mm. from the origin of the left anterior descending coronary artery this vessel was completely occluded by a calcified, atheromatous plaque. 25 mm. from the origin of the right coronary there was an atheromatous ulcer to which a fibrin clot (probably agonal) was attached. Microscopically the myocardium showed patchy fibrosis, calcification and atheromatosis of coronary arteries with peri-arterial round cell infiltration.

Lungs: Both pleural cavities were closed by dense adhesions. Lungs weighed 2,500 grams. All interlobar fissures were closed by dense fibrous adhesions. On section the parenchyma was firm and homogeneously reddish gray. Throughout the entire parenchyma there were tiny grayish white translucent raised nodules. Microscopically these nodules were made up of caseous centers surrounded by epithelioid cells, occasional Langhans giant cells and round cells. The adjacent alveoli were filled with exudate of fibrin, polymorphonuclear leukocytes and caseous debris. Tracheobronchial nodes were prominent and contained foci of caseation and calcification.

Liver and spleen and pancreas microscopically showed multiple tubercles with considerable caseation.

Kidneys were grossly enlarged and weighed 210 and 220 grams respectively.

Cortex was studded with small yellowish pin point areas which on cross section reached into the medulla in form of streaks. On microscopic examination these proved to be areas of caseation necrosis with very little cellular reaction. Brain weighed 1,100 grams. There was generalized convolutional atrophy. All arteries of the Circle of Willis were markedly sclerotic. The left middle cerebral artery was almost completely occluded by an atheromatous plaque. On cross section of the brain there was found a soft cystic area about 1 cm. across located near the anterior thalamic nucleus on the left. There was no evidence of tuberculosis in the central nervous system.

Pathological diagnoses:

1. Acute caseous tuberculosis bronchopneumonia.
2. Disseminated acute caseous tuberculosis (miliary) involving liver, spleen, adrenal, thyroid and pancreas.
3. Old healed myocardial infarct, left ventricle, with aneurysmal dilatation and calcification.
4. Severe coronary sclerosis with old occlusion of left anterior descending branch and atheromatous ulceration of right coronary artery.
5. Generalized arteriosclerosis.
6. Encephalomalacia, focal, left cerebral hemisphere.

*Resident in Pathology, Medical College of Virginia Hospital, Richmond.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for July 1950 as compared with the same month in 1949 and for the period of January through July 1950 as compared with the same period in 1949 is as follows:

	July 1950	July 1949	Jan.-July 1950	Jan.-July 1949
Typhoid and paratyphoid	10	28	39	70
Diarrhea and dysentery	543	1,000	2,138	1,611
Measles	200	628	2,224	21,101
Scarlet fever	27	32	583	432
Diphtheria	1	11	94	83
Poliomyelitis	212	41	231	52
Meningitis	6	3	86	55
Brucellosis	5	9	36	39
Rocky Mountain spotted fever	18	29	35	59
Tularemia	3	6	21	19

THE POLIOMYELITIS OUTBREAK IN WYTHEVILLE

Of the 323 cases of poliomyelitis reported in Virginia at this date (August 8, 1950), 137 have been from Wythe County. Of these, 70 have arisen in the Town of Wytheville and of 22 deaths in the State, 10 have been allocated to Wytheville. With an estimated population of 5,000 in the Town of Wytheville, this gives an attack rate of 1,400 per 100,000 population. The attack rate for the State as a whole thus far is 10 per 100,000 population. In other years of high incidence the attack rate was 27.0 per 100,000 in 1944 and 18.0 per 100,000 in 1948.

The phenomenal attack rate and the explosive nature of the outbreak—70 cases reported in Wytheville in four weeks—bring up the question as to whether some factor other than person to person contact may be involved. With this in view, a team from the State Health Department is in Wytheville studying each case, its relationship to other reported cases and the environmental conditions surrounding each case. The team is comprised of a doctor, a public health nurse, an engineer and a sanitarian, working in collaboration with representatives of the local health department. Through the cooperation of the National Foundation For Infantile Paralysis, one of its consultants came to Virginia to assist in the study of the epidemiological aspects of the outbreak.

To date the study has revealed no common denominator among the cases reported. Investigations were made of water, milk supplies, sewage disposal and fly prevalence. The incidence has not been localized in any part of the town which could be labeled as a focus, but reported cases have been widely scattered in sequence of occurrence.

Multiple cases have occurred in 11 families in Wythe County. This is at a higher rate than has occurred in the State in recent years of high incidence.

The following table shows median age, age distribution and mortality of Wythe County and the State in high incidence years:

	No. of Cases	Median Age	Under 10 Years	No. of Deaths	Deaths Percent
Virginia—1944	756	8.8	57.3%	66	8.7
Virginia—1948	567	6.7	88.4%	32	5.6
Virginia—1950 (to Aug. 8)	323	7.8	62.4%	22	6.8
*Wythe Co.—1950 (to Aug. 8)	137	8.0	61.6%	15	10.9

*Wytheville cases included in Wythe County.

MEDICAL SOCIETY OF VIRGINIA

Medical Service Committee

Indigent Care

The medical profession has always been concerned with the care of those individuals who are not capable of paying for their necessary medical care. Indeed, hospitals were originally established to provide this type of care, and in many large cities, the oldest and longest established institutions are often of the so-called "charity" type. Nevertheless, with the constantly growing population and the ever-increasing cost of medical care, the problem of delivering adequate care to those unable to pay for all or part of a catastrophic illness requiring hospitalization, is one of prime importance to our profession. Oftentimes, such an illness, if unprovided for, may suddenly precipitate a crisis even in a provident family and make them indigent. Experience shows that help at this time is of great importance and in most instances, if it is provided, the family no longer is medically indigent after the care is over, and frequently, the bread-winner has recovered his health and goes back to work.

To be sure, there are in the larger cities, out-patient facilities where excellent medical attention may be obtained at a minimum, or indeed, no cost, and it is rare that anyone really needing medical attention goes without it. However, these facilities are not numerous enough; particularly, is this true for those who live in rural communities. One might argue that modern methods of transportation minimize the need even in isolated areas, for such attention, but many still feel that there are unmet needs in these areas.

Here in Virginia, an attempt is made to provide indigent and medically indigent individuals with this care through matching funds, whereby patients can be admitted to any hospital for needed care, the State matching dollar for dollar funds put up by the local communities or counties. These funds are necessarily limited and are apportioned on the basis of population. Insofar as this scheme goes, it is excellent, for it still places a fair share of the burden on the local communities where this responsibility definitely should be partially borne. Furthermore, it allows our citizens to remain in their communities, in most instances, and local institutions are helped and supported in this fashion.

Maryland has a most comprehensive plan, which provides for hospitalization, payment of moderate fees to physicians, and even specialist's fees for all of their indigent. This plan is much more expensive than the plan operating in Virginia, and it also provides for office care for these patients. This works quite well, and in a small state, where the rural population is not nearly as large as in Virginia, it is a good plan.

The State of Washington provides comprehensive medical care for the indigent, and while it seems to be satisfactory, it is expensive and has the officials of the state quite worried about financing the cost of such a plan. Also, because it is so liberal and comprehensive and that so much money is involved, many feel that it is handled with too free a hand by the politicians.

Most other states care for their indigent in a very haphazard fashion under welfare set-ups, which are admittedly unsatisfactory.

The American Medical Association has, through its Council on Medical Service, set up a Subcommittee on Indigent Care which is now engaged in the study of this problem, gathering all of the available information about the various plans throughout the country, hoping eventually to work out solutions for this care, perhaps using voluntary insurance plans to support it. Admittedly, such a proposal presents many problems. The principal one is that indigents will weight any voluntary insurance plan with many poor risks. However, if voluntary health insurance can be sold to the majority of people in this country, the fact that a large number take these plans will minimize the "weighting" by these indigent individuals.

Another idea seemingly worthy of some consideration is to suggest that each hospital of one hundred beds or over, set up an out-patient department, which might be serviced by local medical societies where the indigent could be examined and treated without cost or at a minimum cost to their family and themselves. Such individuals, of course, would be certified by the local welfare departments.

This is a pressing problem and the medical profession should not delay in attempting to find additional solutions for delivering medical care to the indigent and the medically indigent. It is recognized that different patterns must be developed to fit the particular locality, and that no one plan would be satisfactory for every State in the Union.

H. B. Mulholland, M.D., *Charlottesville, Va.*

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals

Lynchburg State Colony — Department of Psychology.

The Psychology Department of the Lynchburg State Colony, which was commented upon so favorably in the recent Duke Report, is composed of four psychologists, a secretary and a stenographer. The work of the Department is divided into four main areas of function.

I. DIAGNOSIS

The Department does diagnostic work with (1) all patients admitted to the Colony; (2) out-patients referred for consultation by physicians, teachers, social workers, and others, in neighboring cities and counties; (3) employees seeking counsel.

Patients admitted to the Colony receive their first psychological examination within 48 hours after their arrival and are given such subsequent examinations as are indicated. These patients are examined in accordance with a formula based upon life age, intellectual level, personality characteristics, etc.

In the year which ended 30 June 1950, members of the Department examined 856 persons and employed 2,731 tests and procedures in so doing.

II. THERAPEUSIS

Until recently, because of the extreme pressure of diagnostic work, psychotherapy was seldom used and was restricted to individual patients, usually outpatients.

Group therapy of the classical type was instituted for the first time in 1948 with six epileptics. At present group therapy is being carried on with a mixed group (both as to sex and type) of relatively high intelligence. It is hoped that the Department's activities in the field of therapy (325 therapeutic interviews were given in the last year) will continue to expand as additional staff members are added and more adequate examining room space becomes available. Many of the patients at the Colony can benefit greatly from appropriate forms of psychotherapy.

III. RESEARCH

In 1937 the Chief Psychologist at the Colony began a study to identify the characteristics most to be desired in a hospital attendant. This, in turn, led to (1) the development of an interview technique (the Philo-Phobe), designed to evaluate personality traits and characteristics; (2) the construction of a scale for the measurement of adult intelligence.

In 1943 the Chief Psychologist was invited to lecture on the Philo-Phobe at the University of Pennsylvania, and the 48 pages of material compiled for that lecture have since served as a manual.

The intelligence scale had been partially standardized when the Wechsler-Bellevue scale appeared. These two scales (developed by psychologists each completely unaware of the other's work) were so similar in design that further standardization of the tentative Colony scale was abandoned.

Work was continued, however, on the two most promising subtests; (1) the Time Appreciation Test which was standardized for use as an emergency test of intelligence for individuals ten years of age or over and an article on this appeared in the Journal of Applied Psychology, August, 1946.

(2) The H-T-P (originally intended to serve as a crude measure of intelligence) which has since been developed into a very complex technique for the appraisal of the total personality and a manual was published as Clinical Psychology Monograph No. 5, in October, 1948. The H-T-P is now in active use in many parts of the United States, and is beginning to be used in foreign countries.

This Department has collaborated with the State University of Iowa in a study to test the value of the H-T-P in predicting future success of graduate students in social work. It is expected that during the present year the Department will be asked to collaborate with the University of Atlanta by appraising H-T-P protocols obtained by sociologists of that University in an ethnological study.

Each professional member of the Department of Psychology is expected to conduct an individual research project, as well as to contribute to the major research problems under consideration. Research work done at the Lynchburg Colony has helped to reveal the inadequacy of the traditional concept of mental deficiency.

IV. Instruction

In 1946 and in 1947 one Junior Internship was offered; since then two Senior Internships have been offered annually. It is believed that intern training is a most important function of the Psychological Department.

In June, 1949, the Chief Psychologist offered a seminar on the H-T-P at Emory University. During the present year similar seminars were conducted at the McGuire Veterans Administration Hospital and also at the Lynchburg State Colony.

From time to time members of the Department lecture extramurally concerning psychological and allied problems.

The Department conducts six demonstration clinics a year for classes from neighboring colleges and universities and other interested groups.

V. Conclusion

To meet generally accepted standards for psychological service for an institution of the Lynchburg Colony's size the Department needs: (1) Four additional full-time psychologists; (2) two more stenographers; (3) more adequate office space; (4) at least one well-equipped play therapy room; (5) an observation room with one-way screen; (6) sound recording and transmission equipment. It is hoped that these needs will be met in carrying out the plans now underway for the expansion and improvement of facilities at the Lynchburg Colony.

Find Newer Sulfa Drug Desirable for Children.

Successful use of gantrisin, a sulfa drug formerly called NU-445, in treating children is reported by Drs. John A. Bigler of the Children's Memorial Hospital, Chicago, and Orville Thomas of Shreveport, La. Good results were obtained in 55 children with pneumonia, bronchitis, tonsillitis, urinary infection and ear inflammation, the doctors report in the May issue, American Journal of Diseases of Children.

Gantrisin is low in toxicity, they point out. It also has the advantage of a high degree of solubility which assures that the drug will not crystallize in the body.

Gantrisin has been used successfully to treat two patients with meningococcic meningitis, according to the doctors.

New Books.

Below are listed some of the newer books in the Library of the Medical College of Virginia, Richmond. These may be borrowed from the Library under usual library rules:

Advances in colloid science. Vol. 3, 1950.
American Medical Directory—18th Edition.
American Neurological Association — Classification of neurological, psychiatric and endocrine disorders.
Brook, ed.—Injuries of the brain and spinal cord and their coverings.
Browd—Rehabilitation of hearing.
Choi—Public health in Korea.
Dry *et al.*—Congenital anomalies of the heart and great vessels.
Farquharson—Simmond's disease; extreme insufficiency of the adenohypophysis.
Farvill—Outline of spinal nerves.
Fulton—Functional localization in relation to frontal lobetomy.
Graubard—Clinical uses of intravenous procaine.
Guggenheim—Phylogenesis of the ear.
Harris—Woman's surgeon. Life story of Marion Sims.
Hawley—New discoveries in medicine.
Lederle—Aureomycin, a review of the clinical literature.
Magoun—Spasticity: the stretch of reflex and extrapyramidal systems.
Marvin *et al.*—You and your heart.
McManus—Medical diseases of the kidney.
Merrill—Atlas of roentgenographic positions.
New York Academy of Medicine—The future in medicine.
Nicholson—Studies on tumor formation.
Olsen—Marketing drug products.
Proceedings, first clinical ACTH conference.
Schmidt—The cerebral circulation in health and disease.
U. N.—The question of establishing research laboratories.
Watson—Outlines of internal medicine.
Williams—Textbook of endocrinology.
Windle—Asphyxia neonatorum.

THE ROANOKE MEETING*

MEDICAL SOCIETY OF VIRGINIA

October 8, 9, 10 and 11, 1950

The City of Roanoke and the physicians of the Roanoke Academy of Medicine are happy indeed to welcome once again the members of the State Medical Society, the Woman's Auxiliary as well as the representatives of the pharmaceutical companies to the 103rd meeting of the Medical Society of Virginia to be held on October 8-11. The doctors of Roanoke have always felt a distinct pleasure and even pride in acting as hosts for the meeting and again extend a sincere and warm welcome to all those who may plan to attend.

The Medical Society of Virginia has met ten times in Roanoke, the last occasion having been the centennial meeting in 1947. Although many members have been frequent visitors to Roanoke over these years, it is hoped that many old friends as well as many new members since 1947 will be present.

Like all Virginia cities, Roanoke has continued to grow and according to the 1950 census now numbers 91,000 inhabitants. Since the last Roanoke meeting of the Medical Society, the city has adopted the title of the "Star City of the South", occasioned by the erection of a giant 100 foot neon star atop of Mill Mountain which is itself 1,800 feet high. With Mill Mountain arising almost directly from the business section of Roanoke, the Star, when it is lighted each night, can be seen from almost all of Roanoke and appears to be part of a giant constellation in the sky.

During the early months of 1950, Roanoke conducted a city-wide chest X-ray survey. Portable X-ray units from the State Health Department were at work for a period of six weeks taking a total of 62,140—70 mm. films. This was the first city-wide chest X-ray survey in the State and proved a very successful endeavor, both as regard to the mechanical technique of organizing such a survey as well as the uncovering of a considerable number of unsuspected cases of tuberculosis and other cardio-pulmonary conditions.

Roanoke, as other growing communities, is suffering badly from the lack of hospital beds. There are seven hospitals in Roanoke: The Lewis-Gale, The Jefferson, Memorial and Crippled Children's (formerly The Roanoke Hospital), The Shenandoah, The Gill Memorial, and The Burrell Memorial Hospital for colored patients, giving a total of approximately 595 available beds. During 1949-50 a hospital campaign was successfully conducted raising more than $2,000,000. This will insure the erection of a new 75 bed hospital for colored patients, the addition of 50 general beds and an increase of 50 beds to the Memorial and Crippled Children's Hospital for the use of crippled children and cases of acute poliomyelitis from all Southwestern Virginia. With the severe poliomyelitis epidemic in Wythe County this past summer the need of these latter beds was even more felt.

As usual, the general meetings, the scientific papers and the scientific and pharmaceutical exhibits will be held at the Hotel Roanoke. Ample hotel accommodations are available at the several hotels of the city.

Roanoke offers a number of parks and scenic driveways for recreational activity. Just 20 miles south on Route 220 one enters the Blue Ridge National Parkway. There are two golf links in Roanoke, a public course and the course at the Roanoke Country Club.

Roanoke and the vicinity present many areas of interest which are perhaps well known to those who have been present at past state meetings. Newer visitors or perhaps older members for another time may enjoy an automobile ride up Mill Mountain where an excellent panoramic view of the city can be obtained. The Norfolk & Western Railway Shops and general offices, and the Viscose Corporation are large plants where arise many of the problems of industrial medicine. Salem, which is only 12 miles distant, is a lovely old town originally founded in 1805. Old brick homes line many of its streets and here is located Roanoke College, founded by the Lutheran Church in 1842. Nearby one can see the graves of General Andrew Lewis and General William Fleming, both heroes of the early Indian Wars. Hollins College, founded in 1842 and one of the earliest institutions of higher learning for women in

*From the Publicity Committee, Roanoke Academy of Medicine.

America, is on the outskirts of Roanoke northward on Route 11. Stately old white columned buildings line the campus roads which are particularly colorful in the early autumn days. Only a few miles further is the little village of Fincastle, the seat of Botetourt County and the oldest community in the area. Its time worn brick court house, the old inn, the colonial churches and residences retain much of the flavor of the eighteenth century for here are records relative to county affairs when Botetourt itself extended to the Ohio. Only 17 miles from Roanoke, it should prove a delightful and well-remembered drive.

These few words have been presented with the hope they may perhaps add a little to the enjoyment of those who will be in Roanoke for the State Meeting. Again a warm welcome is extended and it is hoped that as many will be present as possible to make this meeting a successful and pleasant one.

Floral Eponym
Alpinia

Alpinus Prosper, (1553-1617)

ALPINUS (Alpino or Alpini), an Italian physician and botanist, was born at Marostica, in the republic of Venice, studied medicine at Padua and practiced medicine, although he is perhaps better known as a botanist. For three years he lived in Egypt, where he was the physician to the Italian Consul in Cairo. Here he studied the palm tree and deduced the doctrine of the sexual differences of plants, which was adopted as the foundation of the Linnaean system. In 1593 he was appointed professor of botany at Padua.

He wrote an excellent historical account of the medicine of the Ancient Egyptians as well as various epidemiological studies. He is credited with introducing coffee and moxa from the Orient. Garrison says that his work on prognosis was not surpassed until the 20th century.

Alpinia is a large genus of Zinziberaceous plants of Asia, Australia and Polynesia. *A. galanga* and *A. officinarum* yield galargal, or China root.

PROGRAM
(PRELIMINARY)

103RD MEETING

MEDICAL SOCIETY OF VIRGINIA

HOTEL ROANOKE

ROANOKE

OCTOBER 8, 9, 10 and 11, 1950

Sunday, October 8
5:00 P.M.
Council

7:00 P.M.
House of Delegates—Dinner Meeting

Monday, October 9
9:00 A.M.

Section A—Parlors D-E-F

INTESTINAL OBSTRUCTION (*Lantern Slides*)—Charles W. Putney, M.D., Staunton

Discussion—Carrington Williams, M.D., Richmond

SECONDARY ANEMIA—K. D. Graves, M.D., Roanoke

EXPERIENCES WITH NEW TYPES OF INSULIN—Thomas S. Edwards, M.D., and H. B. Mulholland, M.D., Charlottesville.

Section B—Ballroom

THE DIAGNOSIS AND TREATMENT OF THE MIGRAINE SYNDROME AND RELATED VASCULAR HEADACHES (*Lantern Slides*)—William H. Higgins, Jr., M.D., Richmond

Discussion—George Craddock, M.D., Lynchburg

THE EVALUATION OF THE CARDIAC PATIENT—Armistead D. Williams, M.D., Richmond

SUBPHRENIC VAGOTOMY VS. GASTRECTOMY (*Lantern Slides*)—J. G. Rennie, M.D., Huntington, W. Va.

Discussion—Hugh H. Trout, Jr., M.D., Roanoke

10:15 A.M.
Recess to Visit Exhibits

10:45 A.M.

Section A—Parlors D-E-F

RECENT ADVANCES IN OBSTETRICAL CARE—E. S. Groseclose, M.D., Lynchburg

ACUTE HEMOLYTIC ANEMIA FOLLOWING CAESAREAN SECTION TREATED SUCCESSFULLY BY SPLENECTOMY—Martin D. Delaney, M.D., Alexandria

A SURVEY OF OBSTETRICS BY GENERAL PRACTITIONERS IN A SMALL GENERAL HOSPITAL (*Lantern Slides*)—Frank D. Daniel, M.D., Charlottesville

Discussion—John O. Boyd, Jr., M.D., Roanoke

Section B—Ballroom

DIAGNOSTIC AIDS IN DISEASES OF THE CHEST—Dean B. Cole, M.D., and L. James Buis, M.D., Richmond

INFECTIOUS MONONUCLEOSIS: A REVIEW OF 210 SPORADIC CASES (*Lantern Slides*)—John E. Stevens, M.D., Richmond

Discussion—G. Watson James, III, M.D., Richmond

CHRONIC LUNG FAILURE—John L. Guerrant, M.D., Charlottesville

2:00 P.M.
House of Delegates—Parlors D-E-F

2:30 P.M.
Ballroom
Moving Pictures

4:00 P.M.
Clinicopathological Conference

Kinloch Nelson, M.D., Medical College of Virginia, Richmond

J. Edwin Wood, Jr., M.D., University of Virginia, Charlottesville

8:30 P.M.
Ballroom

Call to Order—George S. Hurt, M.D., Chairman, Committee on Arrangements

Invocation—Rev. J. E. Stockman, St. Mark's Lutheran Church, Roanoke

Announcements

Introduction of President

Awarding of Certificates to Members in "Fifty Year Club"

Address by President—Walter Cleveland Caudill, M.D., Pearisburg

Memorial Hour—A. M. Showalter, M.D., Chairman, Membership Committee

Address—Present Trends in Legislation in Washington—Senator Harry Flood Byrd, Berryville

Address—Civilian Defense—Colonel William L. Wilson, Special Assistant to Surgeon-General, Washington, D. C. (Followed by a 20 minute moving picture "They Also Serve")

Tuesday, October 10
9:00 A.M.
Section A—Parlors D-E-F

The Surgical Treatment of Varicose Veins of the Lower Extremities—Marcellus A. Johnson, III, M.D., Roanoke

Hematuria as a Manifestation of Sickle Cell Disease—A. A. Creecy, M.D., N. R. Verano, M.D., and T. G. Hurdle, M.D., Kecoughtan

Experimental Studies with Preserved Aortic Grafts—C. C. Coleman, Jr., M.D., Ralph A. Deterling, Jr., M. D., and Mary S. Parshley, Ph.D., New York City

Section B—Ballroom

Treatment of Fractures by the General Practitioner (*Lantern Slides*)—O. Anderson Engh, M.D., Arlington

Discussion—Charles J. Frankel, M.D., Charlottesville

Lower Nephron Nephrosis (*Lantern Slides*)—M. M. Pinckney, M.D., Richmond

Discussion—Frank Pole, M.D., Richmond

Observations on the Antihistamine Drugs—Oscar Swineford, M.D., Charlottesville

10:15 A.M.
Recess to Visit Exhibits

10:45 A.M.
Section A—Parlors D-E-F

Benign Lesions of the Stomach (*Lantern Slides*) H. Nushan, M.D., Kecoughtan

Discussion—Charles M. Caravati, M.D., Richmond

The Diagnosis of Malignant Diseases of the Colon—Carrington Williams, M.D., Richmond

Carcinoma of the Breast: Radical Mastectomy, Oophorectomy and Hormone Therapy—Guy W. Horsley, M.D., Richmond

Section B—Ballroom

Tuberculosis in Pregnancy (*Lantern Slides*)—Alfred L. Kruger, M.D., Norfolk

Discussion—C. L. Harrell, M.D., Norfolk

Evaluation of Some New Therapeutic Measures in the Management of Rheumatoid Arthritis (*Lantern Slides*) — William L.

Wingfield, M.D., Elam C. Toone, Jr., M.D., and John P. Williams, M.D., Richmond

THE LAST TEN YEARS IN OPHTHALMOLOGY—Luther C. Brawner, M.D., Richmond

2:30 P.M.

General Session—Ballroom

STENOSIS OF THE ANUS OF FUNCTIONAL ORIGIN—C. B. Morton, M.D., Charlottesville

THE VISCERAL LESIONS OF SCLERODERMA—J. Morrison Hutcheson, M.D., Richmond

THE GENERAL PRACTITIONER'S ROLE IN THE GENERAL HOSPITAL—John O. Boyd, Jr., M.D., Roanoke

Discussion—Harvey B. Haag, M.D., Richmond

2:30 P.M.

Moving Pictures—Parlors D-E-F

3:30 P.M.

Recess to Visit Exhibits

4:00 P.M.

Ballroom

POST GRADUATE EDUCATION FOR THE PRACTICING PHYSICIAN—Franklin D. Murphy, M.D., (*Guest*) Kansas City, Kansas

6:00 P.M.

Cocktail Party

7:00 P.M.

Dinner and Entertainment

Ballroom

Wednesday, October 11

9:00 A.M.

Ballroom

Symposium—Progress in Medicine

CANCER OF THE COLON AND RECTUM—George T. Pack, M.D., (*Guest*), New York City

ACTH AND CORTISONE AND THE TREATMENT OF VARIOUS DISEASES—William Parson, M.D., Charlottesville

TREATMENT OF ARTHRITIS—Russell L. Haden, M.D., Crozet

ANTIHISTAMINICS—Harvey B. Haag, M.D., Richmond

Installation of C. L. Harrell, M.D., as President

Announcements and Adjournment

PROGRAM

Medicolegal Seminar

Place—Ballroom, Hotel Roanoke, Roanoke, Virginia

Time—2:30 P.M. to 5:30 P.M.—October 11, 1950

2:30 P.M. COMMON PROBLEMS (General).
Speaker—Geoffrey T. Mann, M.D., LL.B., Chief Medical Examiner, Commonwealth of Virginia.

2:45 P.M. COMMON PROBLEMS (Toxicology).
Speaker—Sidney Kaye, MSc, Toxicologist to the Chief Medical Examiner's Office, Commonwealth of Virginia.

3:00 P.M. THE ELEMENTS OF A GOOD MEDICAL EXAMINER'S INVESTIGATION.
Speaker—To be announced.

3:30 P.M. EXPERIENCES, TRIALS AND TRIBULATIONS OF A MEDICAL EXAMINER IN THE FIELD.
Speaker—T. Addison Morgan, M. D., Coroner—Southampton County.

4:00 P.M. AIMS AND OBJECTS OF A MEDICOLEGAL AUTOPSY.
Speaker—Arnold F. Strauss, M. D., Pathologist, De Paul Hospital, Norfolk; Designated Pathologist to the Chief Medical Examiner's Office—Norfolk District.

4:30 P.M. THE CENTRAL OFFICE IN RELATION TO THE MEDICAL EXAMINER IN THE FIELD.
Speaker—Russell S. Fisher, M. D., Chief Medical Examiner, State of Maryland.

5:00 P.M. ROUND TABLE DISCUSSION.
Panel—Russell S. Fisher, M. D.
Arnold F. Strauss, M. D.
T. Addison Morgan, M. D.
Sidney Kaye, MSc.
Thomas H. Alphin, M. D.
Robert K. Waller, M. D.
Geoffrey T. Mann, M. D., LL.B.

SCIENTIFIC EXHIBITS

1. *Plastic Surgery.* Leroy Smith, M. D., St. Elizabeth's Hospital, Richmond.
2. *Antibiotics in Experimental Gas Gangrene.* William R. Sandusky, M. D., School of Surgery and Gynecology, University of Virginia, Charlottesville.
3. *Evaluation of the Treatment of Early Syphilis with Arsphenamine and Heavy Metal.* Dudley C. Smith, M. D., and Robert C. Thompson, M. D., University of Virginia, Charlottesville.
4. *Plastic Arch Supports.* O. Anderson Engh, M. D., Anderson Orthopedic Clinic, Arlington.
5. *The Community Blood Bank.* J. H. Scherer, M. D., Virginia Blood Bank, Richmond.
6. *Unusual Radio-sensitivity of a Malignant Teratoma of Mediastinum and a Mesothelioma of Pleura.* Samuel Richman, M. D., Veterans Administration Hospital, Richmond.
7. *Use of Physical Medicine in Hemiplegia.* Walter J. Lee, M. D., and A. Ray Dawson, M. D., Medical College of Virginia and Veterans Administration Hospital, Richmond.
8. *Toward a Healthier Virginia.* (Tuberculosis Can Be Conquered—Tourists are Protected in Virginia). J. Robertson Anderson, Virginia State Department of Health, Richmond.
9. *Benign Lesions of the Stomach.* H. Nushan, M. D., B. Miller, M. D., and William A. Read, M. D., Veterans Administration Hospital, Kecoughtan.
10. *Surgical Results in Crossed Eyes. Rhinoplasty and Endaural Surgery.* E. G. Gill, M. D., Gill Memorial Eye, Ear and Throat Hospital, Roanoke.
11. *Esophageal Tamponade for Bleeding Varices.* J. M. MacMillan, M. D., and C. M. Caravati, M. D., Richmond.
12. *Clinical Electroencephalography and Electromyography.* I. S. Zfass, M. D., Richmond.
13. *Mental Health in Virginia.* Mental Hygiene Society of Virginia, Rex Blankinship, M. D., President, Richmond.
14. *Anomalies of the Gallbladder.* David B. Corcoran, M. D., Suffolk, and K. Kenneth Wallace, M. D., Norfolk.
15. *Interesting Eye Photographs* (Kodachrome). William F. Hatcher, M. D., Roanoke.

Moving Pictures

1. *Physical Therapy and Chest Surgery.* Veterans Administration.
2. *Nephrectomy for Hypernephrome.* A. A. Creecy, M. D., N. R. Varano, M. D., and T. G. Hurdle, M. D., Veterans Administration, Kecoughtan.
3. *Peripheral Nerve Injuries.* American College of Surgeons.

TECHNICAL EXHIBITS

1. VanPelt and Brown, Inc., Richmond.
2. Eli Lilly and Company, Indianapolis, Ind.
3. Peoples Drug Stores, Inc., Washington, D. C.
4. Mead Johnson & Company, Evansville, Ind.
5. Lederle Laboratories, New York, N. Y.
6. The Liebel-Flarsheim Company, Cincinnati, Ohio.
7. The National Drug Company, Philadelphia, Pa.
8. Powers & Anderson, Inc., Richmond.
9. Wm. P. Poythress & Co., Inc., Richmond.
10. Sharp & Dohme, Inc., Philadelphia, Pa.
11. M & R Dietetic Laboratories, Columbus, Ohio.
12. A. S. Aloe Company, Washington, D. C.
13. Doho Chemical Corporation, New York, N. Y.
14. White Laboratories, Inc., Newark, N. J.
15. Physicians Products Company, Inc., Petersburg.
16. The Baker Laboratories, Inc., Cleveland, Ohio.
17. G. D. Searle & Company, Chicago, Ill.
18. The Borden Company, New York, N. Y.
19. Sandoz Chemical Works, Inc., New York, N. Y.
20. W. B. Saunders Company, Philadelphia, Pa.
21. Camel Cigarettes, New York, N. Y.
22. J. B. Lippincott Company, Philadelphia, Pa.
23. Schering Corporation, Bloomfield, N. J.
24. U. S. Vitamin Corporation, New York, N. Y.
25. Zimmer Manufacturing Company, Warsaw, Ind.
26. The Upjohn Company, Kalamazoo, Mich.
27. Ciba Pharmaceutical Products, Summit, N. J.
28. Philip Morris & Company, Ltd., Inc., New York, N. Y.
29. Valentine Company, Inc., Richmond.
30. A. H. Robins Company, Inc., Richmond.

31-33. Coca-Cola Company, Atlanta, Ga.

34. E. R. Squibb & Sons, New York, N. Y.
35. Pet Milk Company, St. Louis, Mo.
36. The Dominion Laboratories, Richmond.
37. Vaisey-Bristol Shoe Company, Rochester, N. Y.
39. J. B. Roerig & Company, Chicago, Ill.
40. Ortho Pharmaceutical Corporation, Raritan, N. J.
41. C. B. Fleet Company, Inc., Lynchburg.
43. The Stuart Company, Pasadena, Calif.
45. Parke, Davis & Company, Detroit, Mich.
48. General Electric X-Ray Corporation, Milwaukee, Wis.
49. Doak Company, Hyattsville, Md.
50. Haag, Inc., Richmond.
51. Charles C. Haskell & Company, Inc., Richmond.
52. Winthrop-Stearns, Inc., New York, N. Y.

REPORTS FOR THE 1950 ANNUAL MEETING

MEDICAL SOCIETY OF VIRGINIA

Minutes of the Council, January 11, 1950

The Council of the Medical Society of Virginia held its winter meeting on January 11, 1950, at the Society's office in Richmond, with the President, Dr. W. C. Caudill, presiding. Others attending were: Dr. C. Lydon Harrell, President-Elect; Dr. R. B. Bowles, Dr. Walter P. Adams, Dr. Guy W. Horsley, Dr. W. J. Ozlin, Dr. W. A. Porter, Dr. J. T. T. Hundley, Dr. Richard P. Bell, Jr., and Dr. J. P. King Councilors; Dr. L. J. Roper, State Health Commissioner; Dr. M. Pierce Rucker, Past President and Editor of the Journal. For the dinner and the meeting afterward, Dr. J. D. Hagood, Dr. Wyndham Blanton and Mr. Robert C. Duval were present.

The meeting was called to order by the President, followed by the roll call. There being a quorum present, the President continued with the unfinished business.

A report from the Legislative Committee was heard in regard to engaging the services of Mr. Robert C. Duval, as Counsel for the Medical Society. It was generally agreed that Mr. Duval's services should be engaged on a retainer fee basis: paying him $50 a month in non-legislative years, and giving him the privilege of making additional charges in Legislative years. Dr. King moved that we accept the recommendations, and the motion was seconded and carried unanimously. This motion was to be effective as of January, 1950.

The President inquired of any report from the Medical Service Committee, but none was offered.

There was no report from the committee to study the feasibility of appropriation to CARE. Dr. King moved that such a committee be appointed and that their report be referred back to the Council. This motion was seconded and carried.

Dr. Hundley moved that the Report of the Committee on Cerebral Palsy for the Legislative Committee be passed for the present. It was stated that this committee wants the Council to approve what they are trying to do for possible influence this may have with the Legislature.

There being no further unfinished business, the President then took up the new business.

Mr. Johnson discussed a letter from Dr. Lull, referring to the "tenure of membership". The question concerned the collection of A.M.A. dues. Several members thought that A.M.A. should be responsible for the collection of these. Dr. Hundley moved that we continue as we did last year, and collect through the constituent societies. It was then moved that a committee be set up to study the whole question of dues, to be known as the Dues Committee. It is to consider the advisability of the local societies collecting State dues, and also the feasibility of requiring all future members of local societies to simultaneously join the State society. A motion was next made by Dr. Hundley that our delegates be instructed to approach A.M.A. concerning the direct collection of dues by A.M.A. This motion was seconded and passed.

The question of an appropriation for Dr. John O. Boyd, Jr., Chairman of the Committee on Medical Service, to attend the A.M.A. Medical Service Committee meeting in Kansas City next month was discussed. Dr. Hundley moved that the appropriation be made on the basis of that provided by A.M.A.'s allowance, that being, first class transportation to and from, with an additional allowance of $6 per day. This motion was passed.

The question was raised as to whether or not we should register as lobbyists, since we are a state society engaged in a broad advertising campaign to influence Congress. It was decided not to discuss the matter until Mr. Duval's advice could be obtained.

A resolution was offered from the Arlington County Medical Society protesting the declaration by A.M.A. that 170 hospitals over the nation are ineligible to provide completely acceptable training in surgery. The Arlington Society requests the A.M.A. Board of Trustees to reverse their action. Dr. Bell moved that the Council endorse the Arlington Society's action and that the endorsement be forwarded to A.M.A. and the American Board of Surgery. The motion was passed.

A resolution from the Assistant Secretary of A.M.A. was read, stating that the A.M.A. favors the development of sound health programs on the state and local level by pediatric groups working in cooperation with the state medical associations and local component County societies and in conformity with the principles of medical ethics as laid down by the A.M.A. Dr. Hundley moved that this resolution be endorsed and be referred to the proper committees of A.M.A. This was seconded and passed.

Dr. Hundley then told the Council that the Medical Society of Virginia had not officially gone on record as being against compulsory health insurance. He then read a resolution expressing the disapproval by the Society of "all efforts to foist Compulsory Health Insurance upon the people of this country." Dr. Hundley moved that this resolution be adopted, to be published in the MONTHLY, recorded in the minutes, and copies sent to the Virginia Senators and Congressmen, to Whitaker and Baxter, to the President of the United States and to each component society with the request that they be adopted and signed by individual members. Dr. Harrell seconded Dr. Hundley's motion and it was passed.

A resolution from the Council of Southern Medical Association that the Southern Medical Association go on record as being opposed to any form of compulsory health insurance was read. Dr. Harrell moved that the Council endorse this resolution of S.M.A. This motion was passed.

In regard to invitations, principally from hotels wanting our convention, received in the executive office, it was

moved by Dr. Hundley that these invitations be acknowledged and that copy of the acknowledgment be sent to the Councilor of the district. This motion was passed.

The matter of an unexpended fund (Dr. Hugh Trout, President 1940) was brought to the attention of the Council, merely for their formal approval of its having been placed in the general fund. This was moved and seconded by Dr. Harrell and Dr. Ozlin. The motion was passed.

A letter from the auditor of a state institution was read in which the auditor inquired if the fee paid by the state for the school's health officer was a personal or institutional fee? It was decided to answer the question, that the fee is individual dues.

Mr. Johnson reported on a recommendation from the Public Relations Committee that the Medical Society take out membership in the State Chamber of Commerce. It was moved and seconded by Dr. Harrell and Dr. Roper. The motion was passed.

Dr. Hundley was then called to report in the absence of the chairman, Dr. Archer, on the Committee on Reorganization. Dr. Hundley read the minutes of the two meetings of that committee and reported that due to a misunderstanding an error had been made regarding the raise in salary for Miss Watkins. Dr. Hundley then moved that the total compensation for Miss Watkins be raised to $3,600 a year, retroactive to October 1, 1949. This motion was seconded by Dr. Porter and passed.

(Dr. Horsley stated in this connection, that action by the Council was not necessary. The Committee on Reorganization was given authority to act.)

Dr. Harrell moved that bonuses be discontinued. This motion was seconded and discussed, but no action taken.

Dr. Horsley stated that in fairness to Miss Edwards and to Mr. Johnson, the budget committee authorized the auditing of the books as of January 1. Dr. Harrell moved that Council approve the action of the Budget Committee in having the books audited and that Council accept their report. Dr. Porter seconded the motion and it was passed.

Mr. Johnson was asked to check on being bonded as treasurer. Dr. Harrell moved that it be left in the hands of the President and Secretary-Treasurer in regard to bonding. This was seconded and passed.

Mr. Johnson was then given opportunity to ask questions and discuss problems arising from his new duties.

In regard to how to act with reference to National Legislation, Dr. Harrell suggested that the Public Relations Committee, the President, and the Executive Committee of Council should be consulted.

Dr. King read the by-laws stating that the activities of the Legislative Committee were confined to the State. Dr. Hundley suggested that we put the Chairman of the Legislative Committee, Chairman of Public Relations Committee and the President on the Executive Committee to advise when necessary. (Although no vote was recorded, this was construed to be the concensus of Council.)

Concerning State legislation, we are to follow the advice of the chairman of the Legislative Committee.

Dr. Hundley stressed the importance of having conferences for the Members of the District Council in their respective districts and hoped that Council would urge these meetings. Mr. Johnson was advised to arrange these meetings himself, to suggest the date to the Councilor and work from there.

In a discussion of housing quarters for the Medical Society, Dr. Hundley pointed out that the Committee on Reorganization of the Administrative offices of the Society has authority with respect to personnel. He then moved that the matter of office space and physical equipment be referred to the Executive Committee of the Council. The motion was seconded and passed.

Mr. Johnson announced the Public Relations Conference date, February 10.

Dr. Harrell suggested a change in the By-Laws:

Article VI—D

Section 14—now reads:

The Executive Secretary-Treasurer shall make a complete yearly report to the House of Delegates at each annual session.

Change to read:

The Executive Secretary-Treasurer shall keep minutes of all meetings of the Council and House of Delegates in a separate file and make a report to the House of Delegates at each annual session.

Dr. Hundley moved that the Council adopt Dr. Harrell's report and refer to the Judicial Committee for submission to the next annual meeting of the House of Delegates. This motion was seconded and passed.

Dr. King asked about a committee appointed to study the reorganization of the procedure of the House of Delegates. Dr. King moved to ask this reorganization committee to provide a Sergeant-at-Arms with sufficient doorkeepers and assistants to segregate and seat the delegates, alternates and visitors at each meeting of the House of Delegates. The motion was seconded and passed.

Dr. Rucker brought up the matter of the Committee on Clinical and Post-Graduate Education: the Committee wants us to send a delegate or join, which would involve the cost, $25. Dr. Horsley moved that we give Dr. Rucker power to act if and when his committee gives him sufficient information. This motion was seconded and passed.

Dr. Caudill inquired if any member of Council wished to bring up any matter. It was suggested that Mr. Johnson send a letter to Members of the District Council urging cooperation and stressing their duties, also send letter to Presidents of each local society reminding them of the importance of the office of Member of the District Council, with the view of better effecting the work of the District Council.

Dr. Ozlin pointed out that the Petersburg Medical Faculty wanted a representative in the House of Delegates. There was discussion as to who was entitled to delegates. The matter of local, component societies was brought up, bringing to light the need for reorganization of these district or local societies. Dr. Caudill asked what the Council thought of appointing a special commission to study this condition

described. It was suggested by Dr. Hundley that this be brought up before the next House of Delegates, by someone from an area affected, such as the Petersburg or Fourth District. Dr. Rucker suggested that Mr. Johnson write an article on the constitutional make-up of the Society. No action was taken.

Dr. Hagood was then called on. He referred to Dr. Walter Martin's letter concerning the indigent hospital fund. Dr. Hagood suggested that it was the Governor's Reorganization Commission rather than Dr. Caudill's commission that made recommendations concerning that matter.

Dr. Hagood was called on to state the case with reference to possible legislation on the subject of Chiropractic. He indicated that a temporary license was granted in 1944, and that this license expired in 1949. He pointed out that an effort would likely be made during the 1950 session to get a grandfather clause, or some provisional license for those who had practiced 25 years or more. The whole matter was discussed with respect to the past, present and future, and Dr. Hagood and Dr. Caudill wanted to have the concensus of the Council as to the best course to pursue.

Mr. Robert C. Duval presented his views on the subject and stated, in effect, that we should perhaps determine (1) if we would permit those now, without any license, to continue practicing without license; (2) consider the door closed to them, or (3) provide another provisional license.

Dr. Horsley brought the group up to date on the number having taken the examinations, the number having passed the examinations, etc.

Dr. Rucker inquired of Dr. Roper as to the danger of these men to public health. Dr. King inquired if provisional licenses to them would be illegal. Dr. Caudill indicated that this would require new legislation. Mr. Duval seems to think that the General Assembly could make a temporary license with no limit. Dr. Hundley suggested that the State Board of Medical Examiners grant a temporary license to be used at their discretion where necessary.

The motion was then made by Dr. Hundley that the Council go on record with a recommendation to the legislative committee that if a Chiropractic Bill seemed imminent, the Medical Society would prefer a temporary license (considering regard for personal hardship and community interest) and that the Medical Society not oppose an extension of such a temporary license not to exceed six years, during which time they would be eligible to take the same type of examination prescribed in the Medical Practice Act of 1944. However, only those who held temporary licenses could be considered eligible. This motion was seconded by Dr. Horsley and passed.

Dr. Wyndham Blanton presented the picture of the possible transfer of the office of Chief Medical Examiner from the State Department of Health to the Virginia State Police. He enumerated many reasons why the office should not be transferred.

In this connection, Mr. R. C. Duval presented a resolution (a resolution which he had prepared on the subject) pointing out his desire that the Council consider the entire resolution or any portion of it separately. Dr. Harrell moved that this resolution be turned over to the Legislative Committee to be used as they see fit. This motion was passed.

Dr. Roper pointed out that even though the office of Chief Medical Examiner seemed somewhat of an extracurricular activity for the State Department of Health, he believed that technical supervision of that office was important.

The subject of Chiropodists' legislation was discussed, with Dr. Horsley pointing out that they seem to wish to improve their standards. It was further brought out that the State Board of Medical Examiners would favor better education, and no reason was advanced why known efforts of the Chiropodists should be opposed. Dr. Hundley moved that the Council approve the action taken by the State Board of Medical Examiners. This was seconded and passed.

Dr. Horsley presented the case of the Graduate Nurses' Association. It seemed that they wished action taken regarding the recommendations of the Commission on Medical Education. Dr. Caudill, as Chairman of that commission, explained the Commission's point of view in feeling that they had turned in a good report. He stated that Dr. Walter B. Martin agrees with the report. Dr. Caudill explained that the proposed requirement of four years of high school for practical nurses should innure to the benefit of those who wish later to complete requirements as a graduate nurse. Dr. Caudill expressed the feeling that the commission's report should be known to those interested. Dr. Harrell moved that the Council approve the recommendations of the Commission. This was seconded and passed.

Dr. Horsley referred to a probable bill making cancer a reportable disease, which seemed to have Dr. Roper's endorsement. Dr. Horsley moved that this legislation be endorsed. This was seconded and passed.

The meeting then adjourned.

HENRY S. JOHNSON,
Secretary.

Minutes of the Council, June 15, 1950
Roanoke, Va.

The Council of the Medical Society of Virginia held its Spring meeting, June 15, at the Roanoke Hotel, Roanoke, with the President, Dr. W. C. Caudill, presiding. Others attending were: Drs. C. Lydon Harrell, President-Elect; Walter P. Adams, Guy W. Horsley, W. J. Ozlin, John T. T. Hundley, J. P. King and Vincent W. Archer, Councillors; also, Dr. L. J. Roper, State Health Commissioner, and Dr. M. Pierce Rucker, Editor of the JOURNAL and Chairman of the Program Committee.

The meeting was called to order by the President, followed by the roll call. The minutes were approved as written, and the President then called for unfinished business.

Dr. Horsley presented a report of the group named to concern itself with quarters for the Medical Society of Vir-

ginia. This Committee consists of Dr. Harry Warthen, Jr.; Chairman, Dr. Horsley and Dr. J. M. Emmett.

He referred to several buildings that had been under consideration and reported one as being available at a cost of $16,000. Dr. Archer inquired how much it would cost to renovate it. The Committee's estimate was $15,000 to $20,000. It was pointed out that another desirable building and site might be available at approximately $35,000. Dr. Archer wondered if this building could be heated from the Medical College of Virginia. Dr. Horsley thought that this would cut down operating expenses. Dr. Horsley wanted to know if this group or committee was authorized to go ahead in negotiating for this three-story, brick building of 12 rooms, 3,500 sq. ft. floor space, with a heating plant.

Dr. Harrell moved that this whole matter be referred back to the Committee and that the Committee be empowered to act with the consent of the President. This motion was carried.

Dr. Harrell referred to the problem of housing those in attendance at the convention in the convention hotel, and indicated that in some states the convention hotel would guarantee so many rooms before making reservations for detail men. Dr. Archer suggested that any members of the House of Delegates should be included in any reservations guaranteed the Medical Society. It was then suggested that cards be sent to the members of the House of Delegates and that reservations be held for them for a waiting period of approximately two weeks and if not taken up by the delegates, that the reservation would revert to the hotel. It was suggested that perhaps two-thirds of the delegates might be expected.

Dr. Harrell motion, then included Dr. Archer's suggestion and was to the effect that the officers of the Medical Society and the personnel of the office of the medical society, delegates of the House of Delegates and guests would constitute a list of persons for whom a guarantee from the hotel for reservations should be assured in advance. The motion was seconded by Dr. King and carried.

Dr. Caudill then asked for new business. There being none, he turned to the agenda.

The matter of Blood Banks was discussed rather fully, the President inquiring of the concensus of the Council on any endorsement of the Red Cross Blood Bank. He also asked if there had been any opinion.

Dr. Horsley seemed to think it was a matter of local option. Dr. Hundley considered that a matter of principle was involved. He gave statistics comparing the set-up of the Red Cross Blood Bank and the private blood bank, and referred to the method of setting up the Red Cross Blood Bank in local areas. He pointed out that the Red Cross consults the local people and follows their advice only if they conform to the requirements of the national organization. He also indicated that unless the local bank goes in with the Red Cross Blood Bank, they will no longer cooperate with the local people in getting blood donations.

Dr. Roper referred to the effort on the part of the Government in getting the help of the Red Cross Blood Banks in case of atomic explosion. He wondered if the supply of blood hy the local blood banks would be adequate in such a case. He also indicated that the cost of blood in the local bank is high for the patient.

Dr. Adams gave the Norfolk picture, referring to much of the same principle brought out by Dr. Hundley and the importance of local autonomy. He also indicated that in his area, donors frequently came from outlying areas, including Newport News, the Eastern Shore and North Carolina. He suggested that doctors can help in the hospitals by asking relatives to go the hospitals and give blood, thus building up the bank. He stated that country people wanted to do this and that Norfolk is very pleased with it.

Dr. Harrell seemed to feel that we were not getting enough blood, but Dr. Adams again said that this is a local affair.

Dr. King thought that the matter was taken care of locally in the 9th District, but indicated that in a serious emergency the blood supply would not be adequate.

Dr. Caudill suggested that this committee continue their observations between now and October with the view of perhaps giving their views to the House of Delegates then.

Dr. Archer requested that a sub-committee more conversant with the issue be appointed. This being in the form of a motion was seconded and carried.

Dr. Caudill appointed Dr. Hundley as Chairman, Dr. Horsley and Dr. Adams to serve with him.

Dr. Caudill then recognized Dr. L. J. Roper. Dr. Roper wanted guidance and advice of the Council, indicating that a number of public health problems that touched the physician have been approved by the Medical Society of Virginia—(Venereal Disease, Child Health, work with Crippled Children, etc.) and that pressure is being brought on the office of health agencies of the state to conduct heart programs. It was pointed out that the national agency is organizing constituent and local agencies that have general interest in heart disease as a problem.

He stated that the State Department of Public Health has not yet taken on such a program but has set-up a provisional one with the view of determining its practicability and anticipate some of the future problems that might arise. He indicated that this had not been too successful and referred to a tentative program that he would like the Council to consider. He mentioned dealing with patients as a diagnostic clinic not a treatment clinic; that the program concern itself only with referred patients; that patients be 21 years old or at least over 16; that the clinic might be held once a week at the Medical College, etc. He indicated that it would perhaps be unwise to conduct such a thing in a number of smaller places, but that it might prove more effective if held in a few of the larger places with adequate facilities, etc.

Dr. Roper suggested a special committee might study this with the State Department of Health with the view of bringing an opinion to the Medical Society in October. The Virginia Heart Association, he pointed out, is conducting clinics now, hut they really do not know what to

do, and they want to be guided by the medical society. Dr. Archer moved that a Committee be appointed. Dr. Hundley pointed out that this is merely in its trial form now. Dr. Harrell thought that five men representing the various sections of the state should be appointed similar to the arrangement for crippled children. Dr. Archer's motion was seconded and carried.

The matter of mal-practice suits and insurance for individual members of the Society was introduced and Mr. Johnson inquired of the disposition that should be made of such inquiries as the one referred to. It was pointed out that the Medical Society of Virginia should not pay for mal-practice suits insurance and that this should be a matter for the local society.

The question of bonding those empowered to write checks of the Medical Society was discussed. Dr. Archer moved that the present amounts be approved. Dr. Harrell offered the opinion that only one person should be authorized to write checks. Dr. Horsley pointed out that this is sometimes important when the other person is away.

The question of any approach to any changes in the Constitution and By-Laws was brought up and it seemed to be the concensus that any such suggestions should be turned over to the Judicial Committee.

Dr. Hundley moved that a master copy of the Constitution and By-Laws be kept. This motion was passed.

Mr. Johnson read a resolution asking that the A.M.A. approve a plan whereby persons would be permitted to make some tests for diabetes in their own case. Dr. Roper moved that this be approved.

Dr. Hundley inquired of the multiphasic health testing program that had been conducted in Richmond. Dr. Roper thought that it had not been quite so successful as they thought it should be. Someone said that Dr. Holmes, City Health Officer of Richmond, had indicated that he would not recommend it as a local health project. It was stated that the Federal Government puts some money into this.

Dr. Archer pointed out that this is an experiment for the medical care of the indigent. Dr. Roper wondered if this is not an outgrowth of conditions where there is an abundance of money.

The subject of contrihuting to the Los Angeles Physicians Aid was discussed and Dr. Hundley suggested that it be indefinitely tabled. This seemed to be the concensus.

The question of honorary membership was brought up and Dr. Archer moved that this be referred to the Judicial Committee. Dr. Rucker referred to still another class of memhership for those in service for fifty years.

Dr. Harrell referred to the possibility of our next convention going to Norfolk, and questioned the wisdom of undertaking to carry on three sections of the Scientific Session simultaneously.

Mr. Johnson inquired what disposition should be made of invitations from hotels about our convention and it seemed to be the concensus that these should be acknowledged with a note pointing out that these would be brought to the attention of the House of Delegates or any committee of that body appointed to consider these.

The President's gavel was then discussed and it was pointed out that this was made of wood from the Walter Reed Home. After considerable discussion, Dr. Horsley made the motion that an appropriate inscription be placed on the gavel indicating where the wood came from, who presented it, and that it is to be used by the presiding officer at the annual session of the Medical Society of Virginia, and that Mr. Johnson arrange for this to be done. This was passed.

The question of a survey of public opinion on the medical profession as suggested by one member was discussed. Dr. Hundley questions the advisability of such a survey on a national level at this time. Dr. Archer moved that Dr. Hundley be empowered to answer the letter suggesting this. This was passed.

A letter was then read from the A.M.A. asking Virginia to sponsor conferences on the local level on "physicians and schools". Dr. Roper indicated that Departments of Health were very interested in this and are now asking for such conferences at the state level. Dr. Archer raised the question if this should be under the Virginia Council on Health and Medical Care. Dr. Roper seemed to think that this was a good idea if interest could be developed and that he would like to see such a program established, and if done, the State Department would be glad to cooperate. Dr. Hundley moved that this be referred to the Child Welfare Committee. This was passed.

A proposed plaque to be placed in the Church at Jamestown commemorating an early Virginia Doctor was discussed. Dr. Harrell moved that the committee named by Dr. Caudill to consider this be empowered to execute the plan. This was passed.

Dr. King reported on a survey that he had made with respect to dues and gave some summarizing results. Dr. Harrell felt that publicity should be given this.

Dr. Adams read the report of the Committee on CARE and moved its adoption feeling that a number of professional institutions should give to such organizations. Dr. Hundley seconded and this motion was carried.

Mr. Johnson raised the question of whether or not the Veterans Affairs Committee should be added to the Standing Committees of the Society. Dr. Archer suggested that the By-Laws be amended to provide for this to be made a part of the Medical Service Committee. Dr. Adams moved that this recommendation be referred to the Judicial Committee. This was passed.

A letter was read from the Metropolitan Casualty Group Insurance Company in reference to their canvassing memhers of the Society. After considerable discussion, Dr. Hundley moved that the subject be tabled indefinitely. This was passed.

A letter was read from the Research Council for Economic Security requesting a contribution from the Medical Society for their organization. After some discussion, Dr. Roper moved that this be tabled indefinitely. This was passed.

Mr. Johnson asked what, if any, action should be taken

by the Society in case of the death of a member. Dr. Ozlin moved that this be tabled indefinitely.

After some discussion in regard to the officers and procedures of the House of Delegates, Dr. Hundley suggested that the Credentials Committee be in charge of this. It was suggested that there be an official badge for delegates and councilors. It was mentioned that the Executive Committee of the Council could advise in the matter of selection of badges. Dr. Hundley moved that the President appoint a Credentials Committee and a Sergeant-At-Arms, to determine who were delegates and to provide satisfactory identification of them at the meeting. This was passed.

Dr. King inquired of the advisability of having the Houes of Delegates as dinner guests of the Medical Society of Virginia on the first night of their meeting.

Dr. Horsley thought this might cost the Society about $300 and suggested that a letter and invitation to the dinner be sent them requesting that they indicate their intention of acceptance. Dr. Horsley moved that as a trial this time, this plan be adopted. This was passed.

In regard to reservations at convention hotels for Medical Society meetings, Dr. Harrell referred to his experience in North Carolina and thought that the hotel reservations should be made for members only. Dr. Horsley thought that the necessary number of rooms should be guaranteed for the members, officers, etc., and moved that a certain number of reservations be guaranteed by the convention hotel and that they be confined to members of the Medical Society.

Dr. Horsley referred to the commencement speaker of the Medical College of Virginia and felt that a letter should be written to the President indicating disapproval of this type of speaker. Dr. King also indicated his feeling that action should be taken by such a letter. Dr. Horsley pointed out that in such a letter, the President should state that the letter was written at the instance of the Council. This was passed.

In the interest of increased membership, Dr. Hundley wondered if our membership could be materially increased, pointing out that the percentage is fairly high. It was suggested that the membership of local societies might be compared with the State membership.

The matter of some provision whereby the Negro physician could benefit more by certain affiliation with the white physician in Virginia was discussed.

Dr. George S. Hurt, Chairman of the Committee on Local Arrangements for our next convention was introduced and Dr. Caudill discussed the program scheduled with him, offering a number of suggestions from the members of the Council.

The meeting was then adjourned.

Henry S. Johnson,
Secretary.

Executive Secretary-Treasurer

It seems that the President of the Medical Society of Virginia has had a good year. Not only has the Society been fortunate in his interest in medicine, but his legislative experience and his special effort to be available when needed, constitute items that have accrued to the advancement of medicine and the efficiency of the organization. His ability, his interest, his energy, and his patience, have been evident.

The Council consists of one member from each Congressional district together with the President, President-Elect, First Vice-President, and Immediate Past President. The Editor and State Health Commissioner are ex-officio members of the Council.

There have been two regular meetings of the Council during the year, one in Richmond, and one in Roanoke. The minutes of both meetings of the Council being included in this issue, there appears to be little need of reporting here the action of the Council.

The Council, acting as the official policy-making body for the Society ("when the House of Delegates is not in session") has been concerned principally with the advancement of medicine, the extension of medical services and the affairs of the Society.

Perhaps few State Medical Societies have a Council younger in age or more capable or more interested in the discharge of the high office with which they have been honored.

It has been interesting to observe this group approach problems concerning the entire membership with the interpretations of the respective localities which they represent. Disagreement has been open and frequent, but this has not impeded progress toward a common point of view accepted by all.

Local Societies: Very properly so, the Medical Society of Virginia is composed of democratically operated local constituent societies. The number, forty-eight, is the same as last year. (There is some indication that this may not be true one year hence.)

Local medical societies (sometimes called County medical societies) may or may not be component societies, component societies being those with a charter from the State Society.

Three of these societies are called "academies of medicine": The Lynchburg Academy of Medicine, the Richmond Academy of Medicine, and the Roanoke Academy of Medicine.

Progress is noted in these local medical societies in the frequency of their meetings, in establishing committees that are more nearly in conformity with those of the State Society and of the A.M.A.

This subject should not be left without commendation of the apparent improved response to the State Society's requests for information and cooperation. Generally speaking, dead-lines are met, data is furnished and advice is given when sought.

Local autonomy, and yet the feeling of "being a part", (both being so essential), characterize these constituent units of the State Society.

Membership: The real important unit in the State Society is made up from three groups: active, associate and life. Active membership is implied by the word "active".

They must come through a local medical society and therefore be in good standing.

Dues to the State Society from this group are $25 a year for those who have practiced in Virginia more than five years. Dues of $15 are assessed for those having practiced in Virginia five years or less.

Associate members are those who move out of the state and continue membership, those who are temporarily stationed in Virginia, and those who are members of an allied profession. There appear to be approximately 175 of these members on our records. Dues for this group are $7.

On the date of closing this report (August 1, 1950), the membership of the Society seems to be 2,205 as compared with 2,158 in 1949—an increase of 47. A statement as to membership follows:

Members reported in 1949			2,158
New Members	135		
Reinstatements	3		
Recount of cards	7		
		145	
Deaths	44		
Resignations	32		
Dropped	22		
		98	
Increase			47

A report of the membership committee is carried in this issue. By order of the Council, the President appointed a Dues Committee to study dues to the local society, to the State Society and to the A.M.A. That Committee's survey and report is expected in a later issue of the JOURNAL.

So much concern has been expressed over the collection of the A.M.A. dues, perhaps some figures on this should be given.

The collection of A.M.A. dues from the members of the Medical Society of Virginia last year was approximately 67 per cent. As of August 3, this year, only approximately 36 per cent has been collected.

THE FIFTY-YEAR CLUB was established three years ago with relative enthusiasm. It is a means of recognizing those physicians in Virginia who have practiced medicine fifty years. The idea has proved a most welcome one by those eligible and it has also apparently grown in favor with the membership. There appear to be 109 of these members on our records at present, with approximately 15 eligible for this year.

GENERAL PRACTITIONER: Following a precedent started by the A.M.A. a few years ago, the Medical Society of Virginia developed a plan of selecting and honoring a General Practitioner of the year from its membership.

The General Practitioner selected for the year 1948 was Dr. J. D. Hagood of Clover, for 1949, Dr. Henry W. Decker of Richmond. Nominations will be opened in the House of Delegates meeting in October and the 1950 choice will be voted by that body.

Perhaps seventy per cent of the members of the Medical Society are General Practitioners. This relatively modest means of acknowledging the efforts and success of one of that group annually, could conceivably contribute to the improvement in the practice of medicine. It is hoped that this custom will continue.

LEGISLATION: 1950 has been an important year in legislation concerning the medical profession.

Proposed national legislation in Washington has been of interest to all of the membership and a number of bills including compulsory health insurance and the President's Reorganization Plans No. 1 and No. 27 failed of passage. For this, much credit is due the interest and efforts of the medical profession.

Communications to Washington from local societies and individual members were solicited and organized. The response was splendid and the results speak for themselves.

The Medical Society of Virginia has reason to be grateful also for the legislative results concerning matters of its interest in the 1950 session of the State Legislature. Much credit for this goes to the leadership of the Chairman of the Legislative Committee and a fellow Senator, the President.

At least a dozen important bills were passed and others defeated, due in part to the interest of membership of the Society.

Though it is never boasted of, the influence of the Medical Society of Virginia in legislative matters both at the national and state levels, is to be respected, as evidenced in 1950.

COMMITTEES: There are over thirty committees. These come under three possible groupings: (1) Standing Committees; (2) Special Committees and (3) committees appointed by the President or established by the Council to report back to either the President, or the Council, or both.

It should be noted that there is a similarity between the committee set-up of the Medical Society and that of the A.M.A. The inherent values accruing seem obvious and much credit for the foresight and planning in this connection is due the Committee on "House of Delegates Procedure".

Commendation is in order for committee reports that were sent in in time for the September issue of the JOURNAL and this should serve to encourage committee chairmen in the future to realize the importance of this.

FINANCES: Although an audited report of the finances of the society is expected to be available for the Council and the first meeting of the House of Delegates in October, it might be said that the Society is apparently living within the budget and it is expected to be balanced at the end of the year.

CONVENTIONS: The office of the Medical Society of Virginia was represented in both of the sessions of the A.M.A. during the year; the National public relations conference and the national conference concerning the educational campaign of the A.M.A.

The office was also represented in at least one-half

dozen other important conferences outside the state and at least a dozen interesting conferences outside the medical profession within the state.

Speaking Engagements: The office of the Medical Society of Virginia was represented in more than fifty speaking engagements during the year, in addition to being represented on several forums and radio programs.

Quarters: Present space for the office personnel is considered quite inadequate and unsatisfactory. In view of this, a committee has been established consisting of Dr. Harry J. Warthen, Jr., Dr. J. M. Emmett and Dr. Guy W. Horsley to concern itself with improving the situation.

This committee has been diligent and has offered some suggestions to the Council, who has empowered them to act.

Personnel: The number of personnel in the office has been increased by the addition of one secretary during the year.

The office has been authorized to bring in another young man if and when this appears to be essential.

The office personnel wish to take this opportuinty of expressing deep appreciation for the spirit of interest and cooperation of the officers, committees, local societies, and individual membership, during the past year. They also want to mention the pleasure afforded in their work with the Society.

Henry S. Johnson,
Executive Secretary-Treasurer.

Scientific Exhibits

As the Monthly goes to press, there are fifteen scientific exhibits and three moving pictures already in hand. There are several applications out and the exhibits this year promise to be of unusual interest.

As the chairman of this committee is in Europe until the first of September, a full report will be given at the annual meeting.

Legislation

The activity of this Committee on even numbered years is always measured by the number, nature and character of the bills and resolutions affecting the medical profession which are under consideration at the biennial sessions of the General Assembly. The session of 1950 will be remembered for the great number of bills and resolutions considered, and many of these, either directly or indirectly, dealt with matters in which we are vitally interested. The members of this Committee, and particularly those who are also members of the General Assembly, had a very busy sixty days, and although much was accomplished, this was done without the necessity of any hurried call for assistance from the membership of the Society throughout the State. This report is a brief resume of the work of the Committee in the 1950 Session.

The Medical Examiner System

Just before the General Assembly convened the Richmond newspapers published the substance of the report of a Legislative Commission appointed to make a study of the co-ordination of police functions in the State. Among other things this Commission recommended the passage of an act which would transfer the laboratory of the Medical Examiner System and the office of Chief Medical Examiner to the Department of State Police. Although the Medical Society of Virginia had initiated the movement which resulted in the adoption of the Medical Examiner System in 1946, no notice that the proposed change was under consideration by the Commission was given to the Society or to the office of the Chief Medical Examiner. Although little time was available before the convening of the General Assembly, immediate steps were taken to prevent any action detrimental to the independence and integrity of this splendid new agency which had already won national recognition and acclaim. A strong resolution condemning the move to make the agency subservient to the law enforcement and police officers of the State was adopted by the Council of our Society, and copies sent to the Chairman of the Commission and to the Governor. Similar resolutions were adopted by component societies, and all coroners in the State were informed of the unexpected development. Dr. Wyndham Blanton was authorized to reactivate his committee which had worked so successfully for the adoption of the plan in 1946, and that committee joined with us in an attempt to enlist the support of the members of the General Assembly before the bill was introduced. The Chairman and certain other members of the Commission quickly realized that the medical profession should have been given an opportunity to be heard before the report was prepared, and that if this had been done, a different conclusion might have been reached. The result was that the bill was never introduced, and the whole plan died a natural death. However, there are certain persons who do not yet realize that the Chief Medical Examiner and his staff of technical assistants, and the coroners throughout the State, must remain unbiased and independent if their scientific findings of fact in the medico-legal field are to have any value, and we must be constantly on guard to protect and preserve that independence if our Medical Examiner System is to continue as it is at present, a model for other states to emulate and follow.

Practice by Sectarians

For the past 30 years no report of the Legislative Committee has ever been complete without a brief statement of how the chiropractic controversy was handled. This year was no exception. To appreciate what was done it is necessary to understand the situation as it existed prior to the convening of the General Assembly in January.

After the chiropractors and naturopaths failed in their fight in the 1948 General Assembly for licenses without examination, they decided to take the Special Board Examinations provided for in the Medical Practice Act of 1944. During 1948 and 1949 fifty-six passed the examination and obtained permanent licenses, leaving twenty-eight chiropractors and five or six naturopaths without legal standing after their five-year provisional licenses expired Decem-

ber 31, 1949. The members of the latter group had been practicing in Virginia an average period of twenty-two years, the last five years being under the protection of provisional licenses. Some of them had failed on the Special Board examination, while others had refused or neglected to take such examination. What to do with these men was the problem. To grant them licenses without examination would be unfair to those who had made preparation for and passed the examination, and would violate every principle which we have upheld for so long. To leave them without legal status would be to invite other unlicensed practitioners to join them in our State, in this way building up a strong pressure group for gratuitous licenses from future sessions of the General Assembly.

This problem was given careful study by the Council and by the Legislative Committee of the Society, and both of these bodies concluded that it would be in the interest of medical regulation if these men could be given a further extension of their provisional licenses, with an opportunity to take the Special Board Examinations and thereby obtain permanent licenses. The members of the Council and the committee felt strongly that it was more important to close the borders of our State to unqualified sectarians who, often with Federal aid under the G. I. Bill, have taken accelerated courses in so-called chiropractic colleges, than to prosecute the members of this small group who were already citizens of long standing. The basic science examination required of all new applicants under the 1944 Act has proved adequate to close our State to untrained and unqualified candidates, and with the future of medical practice thus protected and guarded, it seemed a propitious time to settle this long controversy which has irritated and upset the General Assembly for nearly forty years.

The Society has long desired a statute permitting the use of injunctions to restrain unlicensed practice, but up to this time the sectarians had successfully opposed any such legislation. Criminal prosecution of violators had proved unpleasant, expensive, slow and ineffective. It seemed highly important to obtain legislative authority for procedure which could put an end to practice by unlicensed persons, and the injunction appeared to be the only process which could accomplish this purpose. The time seemed ripe for obtaining such a statute provided the opposition of the sectarians could be eliminated, and this was accomplished when the Council and this Committee determined not to oppose an extension of the provisional licenses for certain of the chiropractors and naturopaths referred to above. In other words, an opportunity presented itself to solve the problem of these practitioners who were still unlicensed, and at the same time obtain a highly desirable statute which would make future unlicensed practice too hazardous to attempt.

A bill was prepared granting further provisional licenses to those practitioners residing in Virginia on December 1, 1949, and holding similar licenses under the 1944 Act, setting up a new Special Board of Examiners to give annual examinations on five basic science subjects, and permitting these provisional licensees to take such examinations and upon passing to obtain permanent licenses. In short, the bill extended the privileges of the 1944 Act for a period of six years, thus giving about thirty-five of these men a legal standing and an opportunity to obtain full licenses. This bill was supported by the chiropractors and naturopaths and passed both Houses without opposition on the part of the medical profession.

A bill to authorize the institution of injunction suits to restrain unlawful practice without the necessity of prior criminal convictions as required under existing law was prepared by counsel for the Society and became House Bill 243 with Honorable M. E. Godwin, Jr., as chief patron. This bill was strongly supported by this Committee, and passed both houses without a dissenting vote. It, as well as the bill sponsored by the chiropractors, has been signed by the Governor, and will be in effect after July 1, 1950. The injunction statute should not only prove valuable in preventing any further unlicensed practice in our State, but should be a strong deterrent to any practice beyond the scope of the license held. With a basic science examination statute as the *sine qua non* for qualifying for licensed practice, and an injunction statute to prevent practice without a license, your Committee is of the opinion that our regulatory statutes are adequate to maintain the high standards of medical care which we have striven for since the first Medical Practice Act was adopted in 1884. Eternal vigilance on our part in keeping these statutes in force and using them in the public interest is all that is needed now, and we feel sure that the medical profession will not fail in that respect.

PRACTICE BY CHIROPODISTS

For a long time there had been no change in the sections of the Act defining and regulating chiropody, and some of the applicable provisions had become obsolete. Amendments sponsored by the Virginia Association of Chiropodists were adopted, and are effective after June 30, 1950. The definition of the practice of chiropody is changed to eliminate any reference to the human hand, and a practicing chiropodist is made a member of the State Medical Examining Board for the sole purpose of giving examinations on certain subjects peculiar to that field of practice. The educational requirements for taking the examinations are made more exacting, and the subjects of examinations are increased to require better training in order to obtain a license. These amendments were not opposed by your Committee, and in its judgment the new provisions are superior to the old law and should prove beneficial to our profession and to the public.

PRACTICE BY CLINICAL PSYCHOLOGISTS

At the present time the laws of Virginia provide for the licensing of clinical psychologists, and authorize such licensees to serve on commissions appointed to determine mental incompetency. A bill defining and regulating the practice of clinical psychology was prepared for introduction at the session of 1950, and a copy of the bill came to the attention of the Council of the Society and of the Committee on Legislation. Some members of these groups felt

that the proposed act was too broad, and that it might permit medical diagnosis and treatment in certain fields without the broad knowledge of medical practice necessary for this service. Because of this potential opposition the sponsors of the bill decided to postpone its introduction until the next session of the General Assembly, using the intervening two years to acquaint the medical profession with the details of the legislation. It may be wise for the Society to name a committee to consult with the representatives of these psychologists and make recommendations as to the stand to be taken by the medical profession with respect to licensed practice in the field of clinical psychology.

Socialized Medicine

A joint resolution expressing the opposition of the General Assembly to any plan of socialized medicine was introduced in the Senate late in the session and was adopted without a dissenting vote. Unfortunately, however, the resolution was caught in the last-day jam in the House of Delegates, and was never reported out by the Rules Committee. The unanimous vote in the Senate was very gratifying to your Committee, and also to the Senator from the 19th Senatorial District who is the President of the Medical Society of Virginia.

Tuberculosis Among Negroes

The medical members of your Committee were greatly interested in plans before the General Assembly for additional hospital and clinical services for negro patients suffering from tuberculosis. A 300-bed hospital had been planned at Elko, Henrico County, but when it appeared that the cost of construction was prohibitive, the plan was reluctantly abandoned. During the session it was finally determined to use $600,000 which had been earmarked for the Elko project, and $300,000 allotted to the Medical College of Virginia for a 50-bed surgical unit, and use this fund of $900,000, together with $450,000 which may be avaliable from Federal funds, and construct a 150-bed surgical center for negro tuberculous patients. The money was appropriated to the Governor's office to be administered by the State agency chosen by him, but as the hospital must be in Richmond it is expected that it will be located near St. Philip's Hospital in Richmond and probably operated by the State Board of Health in connection with the Medical College. The plan is well conceived and when made fully effective should go far toward supplying medical and hospital facilities for a section of our people which has been sadly neglected in the past.

Conclusion

We are grateful to all those, whether they be legislators, laymen or members of our profession, who have given so freely of their time and their services in the work of our Society and its Legislative Committee. Without such loyal support our work would be difficult indeed. Your President brought to our legislative problems the same insight and judgment that he is using in his work with the Society, and his influence in the General Assembly and the confidence reposed in him by all his colleagues there enabled us to obtain results which would otherwise have been impossible.

Respectfully submitted,

The Committee on Legislation

James D. Hagood, *Chairman*
J. Frank Polk
Dean B. Cole
Charles H. Henderson
J. Edwin Wood, Jr.
Frank A. Farmer
Carrington Williams
F. C. Pratt
George W. Schenck

Medical Service

The Medical Service Committee met on three occasions during the past year to discuss problems considered to fall within its province. Each of these meetings was attended by a majority of the committee and the discussion which ensued was free and considered. The members feel that they learned much as a result of these discussions and the general conclusions reached are included in the following report.

Two conferences sponsored by the A. M. A. were attended by members or a representative of this committee. The first was held in Kansas City during the winter and was the fifth Annual Conference on Rural Health. The importance of this conference is being increasingly recognized and the committee feels that representation at this conference should be made an annual thing. The second was a regional conference held in Raleigh, North Carolina, for the consideration of prepayment hospital insurance plans. It was sponsored by the Council on Medical Service of the A. M. A. and was attended by doctors from several of the South Atlantic states as well as representatives of Blue Cross, Blue Shield and commercial insurance companies. It is felt that much resulted from this conference, and other similar conferences held throughout the country, and that whenever such conferences are held concerning subjects pertinent to this committee that representation should be insured.

Members of this committee have published short articles in the Virginia Medical Monthly on several of the subjects considered questions for the committee's consideration. They more adequately explain these matters than the brief paragraphs that follow and the attention of the membership is directed to them for further information.

I. Prepayment Insurance

The committee feels that the Medical Society of Virginia should endorse the establishment of minimum standards for hospital and medical care prepayment insurance plans on a state level. This is essentially the policy adopted by the Council on Medical Care of the A. M. A. which hopes to establish such minimum standards for several different types of policies and th n endorse all policies adhering to these minimum standards, be they offered by commercial or nonprofit insurance corporations. We further feel that it is desirable that Blue Cross stick to the field of hospitaliza-

tion and avoid entering the field of medical care, and conversely that Blue Shield devote its attention to medical care exclusively and make no provision for covering hospital service. The failure of the two large Blue Cross-Blue Shield plans in this state to standardize their policies at a much earlier date is not understood by this committee.

II. RURAL HEALTH

The committee feels that the National Rural Health Conference is worthwhile both in developing plans for improving the health situation in rural areas and also in serving a worthwhile public relations function. We feel that rural medical care is in most instances adequate and compares favorably with that in most urban areas. As a result of improvement in transportation and communication the modern rural physician can serve a much larger number of people in the same span of time and do so more efficiently. It is felt that we should direct our efforts toward the education of rural people in the necessity of making the area more attractive to the doctor they may seek to move into their area. We are in accord with a study currently being pursued by the State Council on Health and Medical Care regarding the distribution of physicians in rural areas and are anxious to review the results of this study when it is completed. The shortage existing of medical men in rural areas may be partially corrected through a change of the philosophy expressed to the student in the first years of his medical training whereby they might be encouraged to enter general practice rather than deciding at that time upon a specialty career. Any effort which would result in elevating the prestige of the General Practitioner will increase the interest in this field on the part of the medical graduate and will thereby increase the number of physicians who would be available to locate in rural areas.

III. THE CHRONICALLY ILL

This subject is a vast one and one occupying the attention of a number of very excellent and hardworking groups. These studies are being carried out in an objective manner and completely unselfishly and should result shortly in worthwhile specific suggestions. At the present time the committee feels that the most promising method for caring for those chronically ill in the community will be achieved through the establishment of a hospital, or nursing home, for these people as a cooperative effort of several adjacent counties. Several instances in which this method is apparently working out well were discussed by the committee.

IV. MEDICALLY INDIGENT

We are drawing a clear line between the indigent and the medically indigent. Few people question the adequacy of the medical care rendered the indigent. In that group of medically indigent a certain part of them can afford to carry prepayment medical insurance plans and the encouragement of this action on their part would appear to the committee to be the best solution to their problem. The others falling in the group of medically indigent who are unable to afford the premium for prepayment medical insurance plan can probably best be taken care of by the assumption of his proportionate responsibility by each practicing physician in the area concerned. This may not appear to be a specific solution to this problem but the encouragement by his fellows of all physicians in the area to do his part will be a step forward in this field. In regard to the hospitalization of the indigent the committee feels that this agency should be supervised by a group in which the physician has a voice, as he is often in a position to better understand the economics concerned than would any other individual or group.

V. VETERANS CARE

This subject has occupied the attention of the committee on several occasions. We feel that the medical profession does wholeheartedly endorse complete medical care for the indigent veteran and the veteran with a service connected disability. However, we feel that hospitalization of short term illnesses could best be taken care of locally leaving only those long range disabilities or those requiring specialized hospital care to be taken care of in government institutions. We are opposed to the medical care being rendered to the nonindigent, nonservice connected veteran and feel that this policy should be exposed as the program of socialized medicine which it actually is.

VI. CHILD HEALTH

Although having discussed this subject on several occasions no definitive study or recommendation is made regarding this at this time.

VII. INDUSTRIAL HEALTH

The committee feels that we should concern ourselves with the health of the worker and plans for the medical care of the workers, not entering into the field of peculiar occupational hazards, etc. As our state is becoming increasingly industrialized, interest in this problem is more real to all physicians practicing in it and we feel that we should watch with increasing interest work in this direction.

VIII. HEALTH COUNCILS

These newly sponsored groups will probably increase in number and strength and be a very important organization in all of our communities. The aims and responsibilities of a health council are not fixed but will vary with the community in which the council is established. The physician will gain much through encouraging the establishment of health councils in his area. Their establishment on a local level is a part of his responsibility. When their organization originates with a local physician or medical society a certain amount of worthwhile public relations is also achieved. Members of this committee are anxious to assist in any way they can in the organization of such councils.

RECOMMENDATIONS:

1. That a very real effort be made to set up one set of minimum standards for hospitalization coverage and for medical service under prepayed medical plans for the entire state of Virginia; that the feasibility of allowing commercial insurance companies adhering to this set of minimum standards to announce their plan as approved by the

Medical Society of Virginia thereby increasing the sales force of prepayed insurance be determined.

2. That a budget be set up for the committee on Medical Service to insure its representation at the Annual Conference on Rural Health and to carry out necessary secretarial work.

3. That the constituent societies either, by renaming or designation of responsibility insure that a standing committee will study and pass on to the membership suggestions received from the corresponding standing committees of the state society.

4. That the Medical Service Committee be authorized to appoint sub-committees from the membership of the state society so that they may adequately cover the eight principal subjects which are the responsibility of this committee and thereby increase the number of members of the state society interested in and working for a better solution to these problems.

5. That in the ensuing years the Medical Service Committee hold its meetings, in-so-far as possible, in different sections of the state and that written invitations to the medical societies adjacent to the meeting place be sent in order that any members interested in problems to be discussed may be present to participate in the discussion.

Respectfully submitted:

Russell Buxton
John G. Graziani
Snowden C. Hall, Jr.
M. H. Harris
Walter B. Martin
H. B. Mulholland
Charles L. Savage
James P. Williams
John O. Boyd, Jr., *Chairman*

Membership

All members were admitted to the Society this year through component Societies and are as follows:

Dr. Woodland Ward Anderson, Jr., Hampton.
Dr. Mason Cooke Andrews, Norfolk.
Dr. William Clayton Barr, Richmond.
Dr. Stephen R. Bartlett, Jr., Richmond.
Dr. Harry Clark Bates, Jr., Arlington.
Dr. Jefferson Davis Beale, Jr., Danville.
Dr. Joseph Wolfe Bear, Jr., Roanoke.
Dr. Thomas Grasty Bell, Staunton.
Dr. Forrest McLean Bennett, Richmond.
Dr. William Branch Bishop, Lawrenceville.
Dr. Charles Porter Blunt, III, Lynchburg.
Dr. Oliver Beirne Bobbitt, Jr., Charlottesville.
Dr. Henry Boone, Norfolk.
Dr. Orin Watts Booth, Newport News.
Dr. Myles Joseph Boyle, Saltville.
Dr. Maurice Miller Bray, Charlottesville.
Dr. Frank Neville Buck, Jr., Lynchburg.
Dr. Walter H. Buffey, Richmond.
Dr. Samuel Henley Carter, Roanoke.
Dr. Stuart H. Catron, Jr., Abingdon.
Dr. Harold Frederick Chase, Charlottesville.
Dr. Stephen Childrey, South Boston.
Dr. Irving Chofnas, Richmond.
Dr. Oscar Withers Clarke, Richmond.
Dr. Thomas Felix Coates, Jr., Richmond.
Dr. John Alexander Cocke, Norfolk.
Dr. Claude C. Coleman, Jr., Inglewood, N. J.
Dr. Custis Lansing Coleman, Richmond.
Dr. William Cassius Cook, Jr., Richmond.
Dr. Stuart G. Coughlan, Staunton.
Dr. William Henry Cox, Richmond.
Dr. John Austin Craig, Charlottesville.
Dr. K. R. Crispell, Charlottesville.
Dr. William Etzler Daner, Richmond.
Dr. William Allaire Dashiel, Richmond.
Dr. Frank Anthony DeLaura, Norfolk.
Dr. Peter Alexander Delmonico, St. Charles.
Dr. Ernest M. Dixon, Portsmouth.
Dr. Joseph Howard Early, Hillsville.
Dr. Donald Terrell Faulkner, Norfolk.
Dr. Charles A. Finnigan, Roanoke.
Dr. Walter Cleveland Fitzgerald, Danville.
Dr. Charles Phillip Ford, Jr., Fredericksburg.
Dr. William L. Foster, Roanoke.
Dr. Franklin Daniel Freda, Newport News.
Dr. John Ferguson Gayle, Hampton.
Dr. Giles Quarles Gilmer, Lebanon.
Dr. William Samuel Grizzard, Petersburg.
Dr. Pembroke Thomson Grove, Winchester.
Dr. Thomas Leon Grove, Saluda.
Dr. Hugh Johnson Hagan, Jr., Roanoke.
Dr. Elliott Clarke Haley, Front Royal.
Dr. Homer Jackson Hancock, Richmond.
Dr. Gordon Fletcher Harrell, Norfolk.
Dr. Jack Hawley Harris, Norfolk.
Dr. William L. Harris, Falls Church.
Dr. Barry Fugh Hawkins, Ivanhoe.
Dr. Edmund McKeill Henderson, Machipongo.
Dr. Erwin Leopold Hirsley, Piney River.
Dr. Ebbe Curtis Hoff, Richmond.
Dr. Grover Cleveland Honeycutt, Jr., Gate City.
Dr. Grey Carlton Hughes, Hampton.
Dr. Samuel Edwin Hughes, Jr., Downey, Ill.
Dr. Thomas Gray Hurdle, Buckroe Beach.
Dr. Lewis Karl Ingram, Stonega.
Dr. Hunter Sheppard Jackson, Richmond.
Dr. George Watson James, III, Richmond.
Dr. Walter Smith Johnson, Roanoke.
Dr. William Russell Jones, Jr., Richmond.
Dr. Frank Robert Kelly, Jr., Richmond.
Dr. Nancy B. King, Sandston.
Dr. Harold Smith Kolmer, Salem.
Dr. James William Lambdin, Franklin.
Dr. Kasty Charles Latven, Arlington.
Dr. Archibald Rich MacPherson, Arlington.
Dr. Geoffrey Thomas Mann, Richmond.
Dr. Martin Markowitz, Richmond.
Dr. John W. Massey, Jr., Richmond.
Dr. James Hugh Masterson, Arlington.
Dr. Virgil Robert May, Jr., Richmond.
Dr. Albert S. McCown, Richmond.
Dr. Frank A. McCue, Richlands.
Dr. Vaden Leach McCullers, Remington.
Dr. William Joseph McGee, Keokee.
Dr. Charles Hymerick Meeks, Richmond.
Dr. Henry Clarkson Meredith, Jr., Norfolk.
Dr. Homer Curtiss Merrick, Norfolk.
Dr. Frederic Potts Moore, II, Richmond.
Dr. Matthew Talmadge Moorehead, Norton.
Dr. Robert Lansing Norment, Arlington.
Dr. John Teaford Obenschain, Waynesboro.
Dr. William Parson, Charlottesville.
Dr. Edwin Pearlman, Norfolk.
Dr. William Lowndes Peple, Jr., Richmond.
Dr. James Andrew Pettigrew, Dunbar.
Dr. James Wyatt Phillips, Coeburn.
Dr. Joseph Thomas Phillips, Newport News.
Dr. Dorn Carl Pittman, Charlottesville.
Dr. Carol LeVan Plott, Harrisonburg.

Dr. Kemp Plummer, Richmond.
Dr. Emmett Francis Reese, III, Courtland.
Dr. Lucile Welsh Richardson, Richmond.
Dr. Charles Russell Riley, Richmond.
Dr. John G. Ringler, Manassas.
Dr. Ella Tompkins Robeson, Hilton Village.
Dr. Richard Merington Rogers, Royal City.
Dr. John Lauchheimer Rosenthal, Norfolk.
Dr. Maurice Santurian, Pound.
Dr. Raymond Schwartz, Arlington.
Dr. Robert H. Sease, Richmond.
Dr. William Hamilton Shafer, Winchester.
Dr. Jack Stone Shaver, Gate City.
Dr. John William Shawver, Tazewell.
Dr. Randolph Tucker Shields, Jr., Staunton.
Dr. Edward Barney Smith, Waynesboro.
Dr. Alexander Erskine Sproul, Staunton.
Dr. Edward Theodore Spunt, Tacoma, Wash.
Dr. Joseph Washington Stein, Arlington.
Dr. James Lawrence Stringfellow, Culpeper.
Dr. Evelyn Louise Stull, Richmond.
Dr. William Hanna Talbot, Richmond.
Dr. Franklin C. Turner, Portsmouth.
Dr. William David Varner, Franklin.
Dr. Thomas Walker, Richmond.
Dr. William Dunn Walker, Catawba Sanatorium.
Dr. William R. Warren, Crange.
Dr. William Jack Weaver, Alexandria.
Dr. Joseph Percivall Whittle, Colonial Heights.
Dr. John Cecil Wilkinson, Norton.
Dr. Felix Brent Wilson, Tappahannock.
Dr. William Lynn Wingfield, Richmond.
Dr. Frederick G. Woodson, Norfolk.
Dr. Edwin Wortham, Richmond.
Dr. Charles Augustus Young, Jr., Roanoke.
Dr. Jacob Derk Zylman, Falls Church.

The names of deceased members will be presented to the Society at the Monday evening meeting.

Acting on the suggestion of our President, your Committee made a detailed study and investigation with the help of the Secretary of the State Board of Medical Examiners and the Executive Secretary and Treasurer of the State Medical Society in order to find out how many available doctors there were in Virginia who were not members of the State Society. As a result of this investigation we herewith submit our report, which is as follows:

Registered in Medicine and Surgery, July, 1949	2,480
Registered as Homeopaths	17
Total	2,497
As of December 1, 1949, members of State Society	2,198
Difference	299
Colored registered and not at present eligible for membership	148
Difference	151
Out-of-State members	164
Eligible and not members, approximately	315

With this information available, a letter was issued to all presidents and secretaries of Medical Societies throughout the State of Virginia under date of May 24, 1950, by your Committee, calling attention to the fact that over three hundred men in the State eligible for membership were not members of the Society, with the request that they be contacted personally, with the hope of increasing our membership in this way.

Your Committee takes pleasure in recommending for honorary membership our distinguished retiring president, Dr. W. C. Caudill of Pearisburg, Virginia.

Respectfully submitted,

J. FRANKLIN WADDILL
J. BOLLING JONES
A. M. SHOWALTER, *Chairman*

Ethics

The only complaint received by the Ethics Committee was referred to the local Grievance Committee. Nothing further being heard from it, we hope satisfactory settlement was made.

K. D. GRAVES
M. H. HARRIS
JAMES L. HAMNER, *Chairman*

Judicial

The Committee of the Medical Society of Virginia appointed last October to study the question of admitting colored doctors to membership, has submitted for approval the following resolution:

CONSTITUTION

That the word "white" be deleted from Article IV of the Constitution.

Your Committee finds that this resolution is not in conflict with any other provision of the Constitution or By-Laws, and it is therefore approved.

CHANGES IN THE BY-LAWS

I. Propose that Article 9, Section 5, page 12, of the By-Laws be revised simply by adding "and the Veterans Affairs Committee".

II. Propose that in line 3 of the first paragraph of Section 10, on page 13 of the By-Laws, after the phrase "composed of", that the following words "the latest" be inserted before the word "first".

III. Propose that Section 14 of Article 7, page 9 of the By-Laws be deleted and replaced by the following:

"The Executive Secretary-Treasurer shall keep minutes of all meetings of the Council and House of Delegates in separate files and make a report to the House of Delegates at each annual session."

IV. Propose that the following be added to, and to follow immediately, the present Section 9, Article 9, page 13 of the By-Laws:

"The Committee shall consist of six members, one to be appointed annually by the President for a term of six years."

V. Propose that the first sentence of Section 7, Article 8, page 10 of the By-Laws be deleted and replaced by:

"Each Councilor District (conforming to the Congressional Districts) shall have a District Council, composed of one representative from each local medical society, and a representative from each county

in which there are doctors but no medical society. These shall be known as Members of the District Council. The Councilors of the respective districts shall serve as chairmen of their respective District Councils."

Respectfully,
J. Morrison Hutcheson, *Chairman.*

Public Relations—1949-50

Perhaps the most important single objective of the Public Relations Committee for the year has been the establishment of a public relations program in local medical societies. The Committee recognizes that such programs are not likely to be found in instances where the society does not have a public relations committee. There are still some societies that have not reported the establishment of such a committee. The Committee has also concerned itself with the President's objectives for the year.

The 1949-1950 fiscal year has been a busy one for members of your Public Relations Committee. Events in Washington, and elsewhere, made it necessary for Committee Members to devote a great deal of time and effort to the consideration of various important public relations activities.

Perhaps at no time in the past have the advocates of Government Medicine been more aggressive and persistent in their determination to saddle the citizens and physicians of this nation with a compulsory system of health insurance. Thus, your Department of Public Relations redoubled its efforts also, and those individuals who mould our legislative destiny were repeatedly contacted and informed of your wishes and desires.

The importance of the national educational campaign has not been overlooked, and the closest cooperation has been given Dr. John T. T. Hundley, Chairman of that campaign, in his zealous efforts. The dissemination of literature, posters, books, and other imformation has, and will be, continued.

The desire to implement the public relations program on the local level brought about a State-wide Public Relations Conference. This event was attended by Members of the District Council, Presidents, Secretaries, and Chairmen of public relations committees of local medical societies. The theme of the morning session was "Public Relations and the Local Medical Society". The theme of the afternoon session was "The Local Medical Society and Public Relations". It appears that in this Conference a precedent was established that may prove valuable. A one-day conference for the above named officers is already planned for the coming year.

The word "isolation" simply should not exist as far as public relations is concerned. Realizing this, stress was again placed upon the matter of filling as many speaking engagements as possible. The office was diligent in this, as well as local medical societies, individual physicians, and a number of lay-persons. Speakers bureaus have been established in a number of medical societies. The Public Relations Department was represented in more than fifty appearances made before non-medical groups during the year.

The Committee has recognized the importance of keeping pace with the thinking of the Nation on public relations matters. It was represented at the National Public Relations Conference held in Chicago last November, and the National Educational Campaign Conference also held in Chicago in February.

Cooperation in itself, being an important facility, the Department of Public Relations has cooperated whenever possible with important organizations. After all, proposed compulsory health insurance is part and parcel of the trend toward Socialism. Inviting and engaging the interests of those outside the medical profession in curing the disease rather than confining our efforts to the defeat of a symptom is indicated.

It seems only proper that mention be made here of the fact that the Medical Society of Virginia has become a member of the Virginia Chamber of Commerce. Already, their facilities have been used in the distribution of literature.

"Current Currents", the news letter of the Medical Society of Virginia, continues to be a public relations project, and efforts are constantly being made to improve it. Plans are being considered to bring you "Current Currents" on a more frequent and regular basis.

Your Committee takes pride in the fact that the Public Relations exhibit was displayed at the annual Convention of the Medical Society of Virginia, and also the annual Convention of the Virginia Education Association.

The Committee wishes to commend the society for progress made in the establishment and functioning of local grievance committees. It is proud to report that in so far as it knows, no grievance reported went without attention.

Frequent conferences were held during the year by the Office of Public Relations with representatives of the Women's Auxiliary, the Virginia Council on Health and Medical Care, Members of the State Legislature, and our representation in the United States House of Representatives and Senate. The same could be said with respect to many other organizations, agencies and interests.

Conferences for Members of the District Council were conducted in eight of the nine Congressional Districts. These were presided over by the Councilor of the District. Similar conferences are being planned for the coming year.

It is still anticipated that a dinner will be sponsored for Virginia's representation in the U. S. House of Representatives and Senate with officials from the Medical Society of Virginia.

The Committee has held regular conferences during the year and copies of the agenda for such conferences are available to the membership of the Society. Four new members have been welcomed to this committee since its last report: Dr. George A. Duncan, of Norfolk; Dr. Andrew F. Giesen, of Radford; Dr. John B. Leary, of Arlington, and Dr. Benjamin W. Rawles, Jr., of Richmond.

Your Committee wishes to emphasize the view that public relations should progress as circumstances dictate.

The Committee now has under consideration several items of importance and solicits the interest and help of the officers, local societies, public relations committees, and the individual membership in its undertakings.

J. M. EMMETT, *Chairman*
GEORGE A. DUNCAN
ANDREW F. GIESEN
JOHN B. LEARY
H. B. MULHOLLAND
BENJAMIN W. RAWLES, JR.

Mental Hygiene

A meeting of the Mental Hygiene Committee of the State Medical Society was held in the office of the Chairman, at 9 North 12th Street, Richmond, on June 22, 1950.

Present were: Dr. Joseph E. Barrett, Chairman, and Drs. R. Finley Gayle, Jr., David C. Wilson, James B. Pettis, Paul Hogg, James V. Bickford, and John Powell Williams.

Absent were: Drs. James P. King and Everett I. Evans.

Also present was Dr. E. L. Kendig of Richmond, who had a matter he desired to present to the Committee.

Dr. Barrett opened the meeting with a general discussion, presenting to the Committee general information regarding the treatment of mentally sick people in Virginia, with a summary statement of the inadequacy of facilities and personnel. He came around to the point that if this is a medical problem, and in the opinion of the Committee it is, it is high time that the Medical Society of Virginia take official cognizance of it and formulate a program of action which will place the medical profession of the State actively in support of the improvement of the facilities and personnel.

The following resolution is offered for adoption:

WHEREAS the care and treatment of the mentally ill is a medical problem and not a welfare or penal one;

WHEREAS more than 50 per cent of all hospital beds are continuously occupied by mentally sick people making it obvious that this is the largest single hospital problem of the day;

WHEREAS a large number of psychosomatic, psychoneurotic and mild emotional disturbances are being encountered by physicians daily in their private practice, making it further obvious that mental disorders constitute the largest single medical problem of the day;

WHEREAS the treatment of most cases of mental disease is time consuming to a much larger extent than most ordinary physical diseases, hence the number of cases one doctor can handle at a time is greatly reduced, and the cost of treatment somewhat increased;

WHEREAS this simple fact has never been properly recognized in appropriating funds for our State Hospitals and Mental Hygiene Program, thereby causing them to be always short of the required number of doctors and auxiliary staff, resulting in them coming to be regarded as custodial institutions, when in fact, they should be amongst the most active of medical services;

THEREFORE, BE IT RESOLVED that the Medical Society of Virginia endorse and actively support a program of improved treatment and care in our State Hospitals and Guidance Clinics as exemplified by more adequate appropriations for medical and auxiliary personnel to the extent of a minimum per capita expenditure of $2.50 per day in hospitals.

BE IT FURTHER RESOLVED that the Medical Society of Virginia endorses and supports a program to expand the teaching of psychiatry in the Medical Schools.

Dr. E. L. Kendig of Richmond discussed with the Committee the need for more facilities for mentally defective persons. As a result of this discussion, the following resolution is offered:

WHEREAS, a survey of the practicing pediatricians of Virginia conducted by Dr. R. H. Dubose of Roanoke has indicated that there are now under pediatric care in this state (exclusive of those in private or public institutions) more than 800 mentally defective children, of which more than 400 are less than 5 years of age, and

WHEREAS, the only state-supported institution now available for their care, the Epileptic Colony at Lynchburg, has such an inadequate number of beds that candidates for admission must wait for months to years before a vacancy occurs, and

WHEREAS, mentally defective children left in a home with normal siblings necessitate at least partial neglect of the latter and inflict psychologic trauma on all members of the household; now

THEREFORE, BE IT RESOLVED that this Committee go on record as recommending that the Medical Society of Virginia actively favor an increase in existing facilities, either at the Lynchburg Colony or by the building and maintenance of a separate institution and that petition be made to the State Legislature for the appropriation of sufficient funds for that purpose.

The Committee is to meet again on August 24, 1950, at 2:00 P. M.

JOSEPH E. BARRETT, *Chairman.*

Child Welfare

The Child Welfare Committee held a meeting in Richmond on January 27, 1950. By invitation, Dr. W. E. Chapin, of the Bureau of Maternal and Child Health, also attended the session.

Consideration was given largely to matters that had been discussed at a meeting on January 13th, sponsored by the Committee on the Fetus and Newborn of the American Academy of Pediatrics. The latter meeting was attended by representatives of the American Academy of Pediatrics, the Maternal Health Committee and the Child Welfare Committee of the Medical Society of Virginia, the Bureau of Maternal and Child Health of the Virginia State Department of Health, and Dr. L. J. Roper, Commissioner of Health.

Plans for the improvement of the care of newborn and premature infants were the chief subjects of discussion at both of these meetings.

Prematurity as a cause of infant death, and the relatively

high mortality of premature infants (constituting about 50 per cent of neonatal deaths) was discussed at length. The question was raised as to whether state funds now available for the hospital care of indigent infants, up to the age of one year, should be limited to the care of prematures. It was the feeling of the Committee that this limitation should not be made, but that the funds should be used as far as possible for infants who show a reasonable prospect for recovery under hospital treatment, and not for those suffering from obviously incurable conditions.

The committee felt that good nursing care was one of the most important factors in the survival of premature infants and that there was a real need for getting a satisfactory premature nursing program under way. The opinion was expressed that the State Department of Health could help a great deal by providing a trained supervisory nurse, experienced in the care of premature infants, who would serve in a consultative capacity throughout the state. The committee also approved the proposal that regular one-day workshops be held throughout the state for training nursery personnel in the latest methods of newborn and premature care. At such regional meetings the program would be under the supervision of a nurse experienced in nursery care, a pediatrician and an obstetrician. Nurses responsible for the care of newborns would be encouraged to attend and take part in the round-table discussions. In such discussions the suggestions made in the American Academy of Pediatrics' manual "Standards and Recommendations for Hospital Care of Newborn Infants" could be discussed and an attempt be made to fit them to the individual nurseries concerned.

It was also suggested that organized training courses in the care of premature infants could very profitably be established at the Medical College of Virginia and the University of Virginia Hospitals. Such courses would last several weeks and would give nurses from smaller hospitals an opportunity to learn the routine care of premature infants by actually working with the babies. Some didactic instruction could also be given.

As a further step toward reducing the premature mortality, it was proposed that the Bureau of Vital Statistics be asked to prepare a complete study of premature mortality each year. Such a study would include the number of premature births and deaths, the age at death, the place of death (whether hospital or home), other causes of death of prematures besides prematurity itself, and other pertinent data. Such a study, with comparison of data for different areas of the state, should make more effective the efforts to lower mortality.

The immunization program as carried on by the Health Department and private physicians was discussed. Emphasis was placed on the importance of completing the routine series of immunizations against whooping cough, diphtheria and tetanus, and smallpox vaccination, as well as of providing the parents with a written record of what had been given and advising them of possible need for future booster inoculations.

In discussing the currently operated well-baby and preschool clinics, it was felt that for a satisfactory clinic, as a place for teaching and for the practical application of preventive medicine, the quarters should be of a high order. Good clinic facilities were thought to have considerable influence on the clinic attendance and the results obtainable.

Subsequent to the meeting, two letters were written to Dr. L. J. Roper regarding clinic quarters and the desirability of having in the State Health Department a nurse for consultation in the care of premature infants. These met with a favorable reply, and assurance of an effort to meet these needs.

The advantages of terminal sterilization of infant formulas were discussed. It was the sense of the committee that it would be highly desirable for all hospitals to adopt this procedure as soon as practicable.

Following the forenoon meeting of this committee, a joint meeting with the Committee on Maternal Health was held in the afternoon. The related pediatric and obstetrical problems in the care of premature and newborn infants were discussed. There was general agreement as to the importance of better nursing care in the lowering of mortality among viable premature infants; and the need for cooperation between pediatricians and obstetricians was stressed.

Respectfully submitted,

Emily Gardner
T. J. Humphries
W. W. Waddell, Jr.
F. R. Hopkins
C. C. Powell
John O. Rydeen
C. B. Hughes
James B. Stone, *Chairman*

Venereal Disease Control

Following the recommendation of the House of Delegates of the State Medical Society last year, the State Legislature enacted laws requiring physicians and others to obtain serologic tests for syphilis in pregnant women. The details of this law followed the suggestions made by the medical advisors. President Caudill was largely responsible for the management of this legislative procedure. The State Health Department has worked out detailed plans for the execution of this prenatal law.

Since last October, the State Health Department has discontinued its Rapid Treatment Center for syphilis at Hampton. The plan which they are now following is, we believe, a superior one. They are distributing penicillin to all physicians of this state for the treatment of syphilis and gonorrhea. This allows patients to obtain their treatment on an ambulatory basis at home and places the responsibility on the physician, where it should be.

In December, 1949, the State Health Department in collaboration with the United States Public Health Service, scheduled a three-day meeting for education and stimulation of all individuals interested in venereal disease control. This meeting covered a district including several states. The papers and addresses were for the benefit

of non-medical epidemiologists, field workers, public health nurses, as well as the medical profession. More effort along this line of medical education in conjunction with the distribution of penicillin by the State Health Department should result in a more active campaign against these preventable infections. If all the physicians of this state and others concerned with the problem were alert and active in the recognition and proper management of the venereal diseases, particularly syphilis and gonorrhea, we can eventually eradicate these maladies.

This committee acted as consultants to the State Department of Health in working out schedules for ambulatory treatment of various stages of syphilis. These directions have been distributed to the physicians in the state.

DUDLEY C. SMITH, *Chairman.*

Cancer

The Cancer Committee has carried out its function as certificating agency for Tumor Clinics at which public and private health agency funds may be spent. At the moment, fourteen Tumor Clinics and three Detection Centers are on the approved list.

The Committee has served as liaison between the Medical Society of Virginia, the Virginia Division of the American Cancer Society, and the Bureau of Cancer Control of the State Health Department.

The Committee has published a series of bulletins in the VIRGINIA MEDICAL MONTHLY.

Respectfully submitted,

I. A. BIGGER
C. W. ELEY
A. B. GATHRIGHT
J. W. HOUCK
A. P. JONES
E. P. LEHMAN
H. R. PEARSALL
MASON ROMAINE
L. J. ROPER
G. Z. WILLIAMS
HERBERT WOLFF
GEORGE COOPER, JR., *Chairman*

National Emergency Medical Service

Throughout the past year your Committee has actually accomplished little for the simple reason that the channels through which action could be effected had not been established by the Governor who was awaiting the expected "master plan" from the National Security Resources Board which was expected to lay down the broad lines along which Civilian Defense would be developed.

Some of the things which have been accomplished which will lay the foundation for future building are:

a. At the request of the Council, Dr. L. J. Roper, Commissioner of Health and ex officio a member of the Council, was appointed by Governor Tuck and reappointed by Governor Battle to represent the medical profession in his Civil Defense Council.

b. The Civil Defense Act of 1942 has been studied by our own attorney, Mr. Duval, who has concluded that under it the Governor, who is himself the Director of Civil Defense, has powers sufficiently broad to accomplish anything that can be reasonably foreseen in the development of a Civil Defense program.

c. The Governor has appointed Mr. J. H. Wyse, Coordinator for Civilian Defense, and has also organized his Defense Council from among the department heads of our State government. Mr. Wyse is an engineer and had this same responsibility in World War II. With this experience, organization should proceed rapidly.

d. Dr. Roper has appointed as his Executive Officer for Civilian Defense Dr. W. R. Southward, State Venereal Disease Control Officer. Dr. Southward's assignment will entail much traveling about the State, giving advice and assistance to localities which are in process of organization.

e. The next step in organization will be the appointment of an Advisory Council from our Society to assist Dr. Roper in making decisions on matters related to medicine and the appointment of Regional Councils, probably based on our Councilor Districts to aid in the implementation of these decisions.

While awaiting the beginning of organization, much thought has been given to State and local planning and tentative programs have been developed which must await the consideration of the whole Committee and the appointment of Dr. Roper's Advisory Council before final acceptance and publication.

Certain basic principles of all planning have been brought out by the Council on National Emergency Medical Service which should be of interest.

a. Eighty-five per cent of casualties caused by atomic explosion are identical with those encountered in the blitz of London with T.N.T. Burns, crushing injuries, concussion, lacerations, hemorrhage, fractures, etc., all accompanied by more or less shock. Only 15 per cent are due to ionizing radiation.

b. About one-half of the casualties result in fatalities and about one-half of these fatalities occur within the first 24 hours and little can be done about them. From the first day the fatality rate is halved daily and it is among this group that many lives may be saved if planning is sound and action is prompt.

c. In the treatment of casualties due to ionizing radiation as well as those mentioned in the previous paragraph, tremendous quantities of plasma and whole blood will be necessary. With the former group, the effect of the radiation may be to cause only temporary aplasia of the bone marrow so that a week or two of time afforded by repeated transfusions may tide them over and permit survival.

d. Destruction is so widespread after atomic explosion that few if any medical facilities will remain intact so that planning must be based on mobility with the rapid mobilization of medical facilities from neighboring areas and rapid evacuation of surviving casualties to safe prepared areas.

e. Finally, though there is a tremendous lot more which might be said about this critically important matter, we in Virginia must realize that our two prime areas in which our defense efforts are most likely to be demanded are Washington on the North and Norfolk on the South.

Fortunately for us who inhabit the rest of the State, any Civilian Defense Plan which can meet these two challenges adequately will also be adequate to demands from any other area.

As organization progresses and plans crystallize, your Committee expects to make supplemental reports to the Council from time to time throughout the coming year.

Respectfully submitted,

John P. Williams, *Chairman.*

Tuberculosis

The Tuberculosis Committee met at Blue Ridge Sanatorium, Sunday, August 6, 1950. Those present were Drs. Welchons, Scott and Stafford; the remaining members of the Committee, Drs. Sims and Nicholls, could not attend. Dr. C. L. Harrell had been invited to attend, but due to a previous engagement he could not come. Dr. I. Lehman of Piedmont Sanatorium was a guest of the meeting.

The Committee had a full discussion of practically all tuberculosis activities in the State, and while it is impossible in a report of this kind to go into the various topics fully, there are a few phases of the meeting which it is felt would be worthy of including in this report.

Case Finding Program:

The Tuberculosis Control program of the State Department of Health was discussed somewhat at length, and it is believed that as a whole there has been a steady improvement made, and an aggressive case-finding program has continued under the supervision of the Director of the Division of Tuberculosis Control. This work consists of routine practice of searching for new cases among the clinically suspicious and from close contacts with known tuberculous patients; also there has been a steady search for new cases through x-ray screening of large groups of apparently healthy persons on microfilms. The State Department of Health has a fleet of eleven machines which are steadily being activated as full-time mobile units. This work has expanded to the point where it can furnish adequate x-ray coverage from now on to every community as rapidly as the leaders complete extensive preliminary ground work which experience has taught is necessary to be complied with before the usual high degree of success can be assured. The objective of the screen work is to x-ray with microfilms at least 80-90 per cent of the population 15 years of age and over. Two of these mass x-ray surveys have been successfully conducted in the State this year—Lynchburg and Roanoke, and the third at Charlottesville and Albemarle County is now in the process of preparation and will be conducted the latter part of September and first of October. These surveys will be continued as rapidly as communities are ready for them and the State can supply the necessary working organization until the entire State, within the age range, has been screened. This procedure should eventually give a very comprehensive idea of the tuberculosis status in the State.

Sanatorium Beds in the State:

The total number of beds in the State for the treatment of tuberculosis has shown considerable fluctuation. Some already available have not been kept filled, due mostly to the limited trained personnel available in the Sanatoria, particularly physicians and graduate nurses. Another reason was that so many of the beds in the institutions were located on buildings where facilities were entirely unsuitable for properly caring for ill, or bed patients. This situation, however, will be largely corrected when the present building and expansion program in the various State Institutions is completed.

The number of beds in the State available at the present time may be divided under two heads—those owned by the State (Blue Ridge, Catawba and Piedmont) and those owned by Municipalities (Grandy at Norfolk, Hilltop at Danville, Pine Camp at Richmond and Roanoke at Roanoke). A breakdown of these as to the ownership and for the two races is as follows:

	White	Negro	Total
State	693	269	962
Municipal	326	200	526
Total	1,019	469	1,488

As stated above, not all of the existing beds in the two groups of sanatoria have been kept filled during the past year, mostly due to the lack of trained medical and nursing personnel necessary to properly operate them.

Some adjustments have taken place in several of the institutions whereby more beds may be made available for treatment in the near future. Pine Camp Hospital now has a capacity of 220 beds (135 for white and 85 for negroes). By rearranging their space, they soon will have approximately 40 more beds for negroes, making the total capacity for the Hospital of 260 beds.

Piedmont Sanatorium has projected its building program to the point where a modern hospital type of building with a capacity for 208 patients will soon be completed, making the total capacity for the institution 320. All of these have facilities for the treatment of ill patients for most all forms of tuberculosis. They likewise have about ready for occupancy a new Nurses Home with a capacity for 100 nurses.

Catawba Sanatorium has had to reduce its capacity temporarily to about 200 beds. This is made necessary in order to construct on the site of the old infirmary a modern hospital building. This new unit is a modern seven-story type of building, and when this project is completed they will have a 400-bed institution, with most of the beds having facilities to treat ill patients. They also plan an addition to their Nurses Home.

Blue Ridge Sanatorium's building program is about half completed to date. The West wing to the Main Hospital Building has been completed with a capacity of 152 beds. Two floors have been opened for patients, and as soon as

the necessary professional help, particularly trained nurses, is available, the remaining part will be opened for patients. A new Nurses Home with a capacity for 75-80 people is almost completed.

The last General Assembly appropriated $900,000.00 for the establishment of a hospital for negroes who need treatment for tuberculosis, this to be located near the Medical College of Virginia in Richmond. The initial capacity is expected to be about 114, and the facilities will be used largely for the surgical treatment of pulmonary tuberculosis. The Federal Government, through the Hill-Burton Act, is expected to furnish funds supplementing the appropriation by the State. A hospital of this kind for the surgical treatment of negroes with tuberculosis has been badly needed for some time, and it will fill a very useful need. In addition to the service it will render patients needing surgical collapse, it will make available through the Medical College of Virginia Hospital a valuable teaching unit where medical students, interns, residents and nurses can get special training in the care and treatment of patients with tuberculosis. The State is considerably behind in its provision for hospitalization and treatment of negro patients with tuberculosis, and more bed space should be made available as soon as State Appropriations for the purpose can be made, and building materials, etc., can be gotten. When the expansion program is completed as briefly outlined here, there will be available in the State and municipally owned institutions more than 2,000 beds, with about one-third for the treatment of negroes.

CHEMOTHERAPY:

Chemotherapy in the treatment of tuberculosis continues to claim much attention, and to have wide use in the therapy program. Several antibiotics and chemicals have been used. Some have already proven their worth, while others are still in the experimental stage. Streptomycin, Para-Aminosalicylic Acid and Tb 1 are the three most commonly used at present. We see some abuse in the use of these drugs, and likewise see some cases in which we think they might have been used to advantage.

Streptomycin still appears to be mostly an adjunctive and not a definitive form of treatment. This is particularly true with the pulmonary form of the disease. The development of drug resistance is still a major obstacle in its use. As it develops early in some cases, it is important to reserve the use of the drug until such time, and for such cases that its effect will be of maximum value to the patient. In the general therapy program, it is well to schedule the drug at a time when it will be of greatest value to the patient.

Para-Aminosalicylic Acid (PAS) may be used alone, or in conjunction with streptomycin. The present impression is that there is less apt to develop drug resistance from its use than is that of streptomycin, and when the two are combined there is believed to be less resistance to streptomycin.

Tb 1 is one of the newer preparations, and to our knowledge has not been used a great deal so far in this country. In Germany it has had rather wide use with what was believed to be good results.

B C G has continued to claim much attention, and to be studied rather extensively throughout the country. Several states, particularly New York, have a definite program of vaccinating negative reactors. The Tuberculosis Control Division of the U.S.P.H.S. is presently carrying on quite an experiment in its use. To our knowledge there is only one place in the State of Virginia at present where it is being used, and that is the Medical College of Virginia. Almost a year ago they started a vaccination program on children in their out-patient department and student nurses with negative tuberculin tests. The Virginia State Department of Health is at present considering the plan of vaccinating certain groups of workers with negative tuberculin tests who are heavily exposed to tuberculous infection. It is too soon to draw any conclusions on the value of this work, or to recommend its general use; more time is necessary to evaluate this.

COLLAPSE THERAPY:

There is a noticeable change in the trend in various forms of collapse procedures in tuberculosis. There is a definite decrease in the number of cases receiving pneumothorax and phrenic nerve interruptions; at the same time there is an increase in the number receiving pneumoperitoneum, and on whom bronchoscopies are done. Also the major collapse procedures have shown a steady increase in use; these involve mostly thoracoplasties, lobectomies and pneumonectomies.

The Committee gave considerable thought to the tuberculous patients at home who have either been in a sanatorium or were waiting to be admitted, or who were receiving home treatment. Some thought the localities where these patients are were, in some instances, not assuming their just responsibility. These agencies are Welfare Departments, Health Units and Boards of Supervisors. It is obvious in the aforesaid review of hospitalization facilities that the State is not yet in a position to take over and assume responsibility for treating in the Sanatoria all patients in the State who are ill and need institutional care. In view of this fact the localities should make better provision for the home care of this class of patients.

The Committee also felt that there was a responsibility, perhaps jointly with the locality and with the State, to provide a better plan for caring for a class of patients who are indigent, have no home to which they may return, have incurable disease and are presently located in the Sanatoria. Some of these patients are incorrigible, are taking up space in institutions and keeping out other cases who could either be benefited by treatment, or would make better use of the time and bed the State is furnishing them.

The latter problems could profitably be studied by a Committee of the State Society in the attempt to work them out more satisfactorily.

From the free discussion on the subject there seemed to be no satisfactory solution to the present inadequate hospitalization situation of the tuberculous in Virginia. Some progress has been made along these lines by enlarging

the institutions and creating more beds, and in general furnished better facilities, but this program obviously has not come far enough. Likewise, the shortage of trained personnel, such as physicians and graduate nurses, available for institutional service needs further study in the hope of ultimate correction. The Committee had no suggestions to make on this subject and did not know what the ultimate solution would be when the present building and expansion program is completed. However, an attempt has been made by the State Department of Health to have better equipment, better working conditions, and where possible to establish shorter working hours and provide better living quarters, as well as better recreational facilities for the personnel during their hours off duty.

John A. Sims
George A. Welchons
Chas. W. Scott
J. B. Nicholls
Frank B. Stafford, *Chairman*

Conservation of Sight and Prevention of Blindness

Our recommendations are as follows:

1. The Medical Society of Virginia should make every effort to educate the public about the need for proper eye care and promote available facilities all over the state for vision tests of school children and an industrial eye program and clinic service for the care of indigent when indicated.

2. We should make every effort to promote professional education for general practitioners and those specializing in eye work, in order to alert them to eye problems and fields of blindness such as glaucoma. For example, we would suggest that our committee be impowered to write to the secretary of each county medical society urging that sometime during the year they have a sight conservation program at which a qualified ophthalmologist would be invited to discuss conditions of the glaucoma, need for early treatment and prevention of eye injuries. Exhibits should be put on at State Medical Society meetings illustrating the above mentioned conditions.

3. Ophthalmologists should cooperate with the Virginia Commission of the Blind anyway possible; especially in referring the children with impaired vision to sight-saving classes.

4. Ophthalmologists and general practitioners should realize that sight-saving classes are not segregated but like public schools, children are members of the regular grades. They should not look upon this as a stigma but as an opportunity to improve their classroom work and their school work in general.

5. All ophthalmologists in every city should avail themselves of the opportunity to visit sight-saving classes in their local public schools so they may be better acquainted with the work that sight-saving classes are doing for children with impaired vision.

6. Ophthalmologists should emphasize in examining their patients that they are not selling glasses. That they are consulting them for a medical examination. There is no single examination that can be made upon the human body that reveals as much information as the examination of the eye including complete fundus examination. A qualified ophthalmologist should be an internist, as well as an ophthalmologist. He should always advise his patients that he is not selling glasses, but that he is giving him the competent, careful medical examination.

7. The medical profession and the ophthalmologist through all ethical agencies of publicity should strive to educate the public along the following lines:

a. That the ophthalmologist is a graduate of medicine and is a general practitioner specializing in diseases of the eye.

b. The public should know the limitation of the examination made by the optometrist and again and again should emphasize that an eye examination is not merely for glasses but for a complete medical examination.

A. A. Burke
W. W. Gill
E. G. Gill, *Chairman*

Study of Cerebral Palsy

This committee has been active in the study of several aspects of the cerebral palsy problem in Virginia. Figures arrived at from several sources indicate that approximately 200 children suffering from cerebral palsy are born in the State of Virginia each year. The total number of cerebral palsy cases in the State at the present time is approximately 3,500 cases in the age group from 1 to 16.

The problem of adequate treatment for these cases in Virginia is the same that is faced in virtually all of the states of the country. New York and California have each spent $100,000 for surveys of the problem in their states within the past 2 years. In studying the solutions for this problem arrived at elsewhere, it was found that the State of Connecticut has established out-patient curative facilities for all conditions requiring rehabilitation with a special section for cerebral palsy. Some big cities have likewise adopted this plan. Some states have special clinics established in the public school for the group above the age of 5.

It is estimated that only 1 in 100 afflicted cases receives proper diagnosis and treatment generally throughout the country and this figure also seems fairly accurate for the State of Virginia. Residence schools, State or privately operated, are practically non-existent except for a limited few children.

Insufficient number of special clinics and diagnostic centers is another finding. A proposed correction of this need could come about by establishment of adequate centers at the State's two medical schools for the training of personnel and observation of treatment. Thirty-four orthopedic centers are functioning in the state but are not staffed with the necessary personnel for adequate care of the cerebral palsy group. Coordination of out-patient treatment centers in hospitals of the larger cities, with the diag-

nostic centers and the establishment of travelling or mobile units to reach the rural and small community group at stated points to instruct patients, parents and teachers, would coordinate the program to the fullest extent. In order to implement this program, need would exist for the establishment of a cerebral palsy registry in order to inaugurate the necessary steps in locating patients for proper referral.

Perhaps the greatest need of all is a program of education to acquaint the legislature and the public with the nature of the cerebral palsy problem, actually as much of a state health responsibility as that of the child handicapped by epilepsy, blindness, mental defectiveness and deaf mutism.

This committee suggests that the Medical Society of the State of Virginia seriously consider the advisability of recommending to the state legislature that an adequately financed survey of the cerebral palsy problem in the State of Virginia be instituted.

JAMES B. STONE
O. A. ENGH
LOUISE GALVIN
ROY M. HOOVER
WALTER O. KLINGMAN, *Chairman*

Industrial Health

The Industrial Health Committee is occupied with the transition from peace to war status. A big turn over in personnel is expected, both in workers and in our doctors. We hope to have a final meeting soon and have some definite plans to report.

T. J. TUDOR, *Chairman.*

Reorganization Committee

Following a motion made and adopted before the House of Delegates in October, 1949:

The undersigned committee was appointed to effect the reorganization of the executive offices of the Medical Society of Virginia. The Committee held several meetings at which time Mr. Johnson and the members of the Budget and Public Relations Committees either met with or were consulted regarding the necessary changes and adjustments.

Mr. Henry S. Johnson was employed as Secretary-Treasurer as of January 1, 1950, at a salary of $10,000 annually, divided equally between the Public Relations budget and the Medical Society budget.

Miss Agnes Edwards was retired from the position of Secretary-Treasurer which she had held for so long, so faithfully and so efficiently. A new position of Managing Editor of the VIRGINIA MEDICAL MONTHLY was created, to which Miss Edwards was appointed, at a salary of $5,000 annually, this arrangement to continue until the meeting of the House of Delegates in 1950.

It was decided to abolish the office of Assistant Secretary-Treasurer.

The salaries of Miss Watkins and Miss Bralley were set at $3,600 and $2,700 annually respectively.

It was voted to abolish the custom of the last few years of paying bonuses.

Mr. Johnson was authorized to secure an assistant and the salary of $5,000 annually was allocated for this purpose, to be divided $1,000 to the Medical Society of Virginia and $4,000 to the Public Relations Budget. Mr. Johnson was also authorized to employ additional clerical help for the executive offices if it was found necessary.

Drs. Horsley and Warthen were appointed as a subcommittee to investigate the possibility of securing more adequate and suitable quarters for the executive offices of the Medical Society of Virginia.

Respectfully submitted,

VINCENT W. ARCHER, *Chairman*
JOHN T. T. HUNDLEY
WALTER A. PORTER
HARRY J. WARTHEN

This report is being rendered in the absence of Dr. Archer by the other members of the Committee to permit publication in the MONTHLY with other committee reports.

House of Delegates Procedure

With reference to the Special Committee on House of Delegates Procedure, we have not had a meeting and I do not believe that anything has been referred to us.

I therefore have no report to make at this time.

H. B. MULHOLLAND, *Chairman.*

DELEGATES TO 1950 MEETING
MEDICAL SOCIETY OF VIRGINIA

Where no name is listed, it is indicative that no delegate or alternate was reported.

Delegates	*Alternates*
Accomack	
Dr. Henrick Shelley	Dr. J. L. DeComis
Albemarle	
Dr. Thomas S. Edwards	Dr. McLemore Birdsong
Dr. G. S. Fitz-Hugh	Dr. George Cooper
Dr. Edwin P. Lehman	Dr. M. D. Foster
Dr. R. G. Macgruder	Dr. A. M. Smith
Dr. H. B. Mulholland	Dr. W. N. Thornton, Jr.
Alexandria	
Dr. James Love	Dr. C. E. Arnette
Dr. John Sims	
Dr. Charles Amole	
Alleghany-Bath	
Dr. J. R. Beckwith	Dr. W. J. Ellis
Dr. S. P. Hileman	Dr. I. T. Hornbarger
Arlington	
Dr. J. R. B. Hutchinson	Dr. John Leary
Dr. J. Ed Payne	Dr. John Hazel

Delegates	Alternates
Augusta	
Dr. Alex. F. Robertson	
Dr. Guy R. Fisher	
Bedford	
Dr. C. R. Titus	Dr. W. V. Rucker
Buchanan-Dickenson	
Dr. J. C. Moore	Dr. J. P. Williams
Dr. R. L. Phipps	Dr. T. J. Sutherland
Charlotte	
Dr. Stuart Wilson	Dr. Thomas Watkins
Danville-Pittsylvania	
Dr. Snowden C. Hall, Jr.	Dr. Charles A. Easley, Jr.
Dr. Henry J. Langston	Dr. W. Earl Overcash
Elizabeth City	
Dr. Frank A. Kearney	Dr. Nowell D. Nelms
Fairfax	
Dr. Jacob Zylman	Dr. William Meyer
Fauquier	
Dr. W. R. Pretlow	Dr. Wade Payne
Fourth District	
Dr. H. H. Braxton	Dr. G. N. Carter
Dr. J. M. Hurt	Dr. J. A. B. Lowry
Dr. J. M. Habel, Sr.	Dr. J. T. O'Neal
Fredericksburg	
Dr. O. William Scott, Jr.	
Dr. Lloyd F. Moss	
Halifax	
Dr. Louis Bailey	Dr. John M. Davis
Isle of Wight	
Dr. Ivan Steele	Dr. Rea Parker, Jr.
James River	
Dr. Garland Dyches	Dr. W. A. Pennington
Dr. J. H. Yeatman	Dr. A. C. Whitley
Lee	
Dr. T. S. Ely	Dr. G. B. Setzler
Loudoun	
Dr. W. O. Bailey	Dr. Roy B. Sampson
Louisa	
Dr. H. S. Daniel	
Lynchburg	
Dr. Ernest G. Scott	Dr. L. R. O'Brian
Dr. S. E. Oglesby	Dr. C. E. Keefer

Delegates	Alternates
Mid-Tidewater	
Dr. R. D. Bates	
Dr. J. R. Gill	Dr. R. D. Bowles
Dr. J. M. Gouldin	Dr. Felix Wilson
Dr. M. H. Harris	
Dr. J. R. Parker	
Dr. H. A. Tabb	Dr. James W. Smith
Dr. A. L. Van Name	Dr. T. L. Groves
Nansemond	
Dr. W. H. Chapman, Jr.	Dr. Richardson Joyner
Nelson	
Dr. Estes Kidd	Dr. E. L. Hirsley
Norfolk	
Dr. Walter P. Adams	Dr. R. L. Payne, Jr.
Dr. John C. Crawford	Dr. K. K. Wallace
Dr. George A. Duncan	Dr. John W. Oast, III
Dr. Brock D. Jones	Dr. Joseph D. Lea
Dr. Herbert W. Rogers	Dr. William P. Sellers
Dr. George Schenck	Dr. John A. Vann
Dr. Frank P. Smart	Dr. M. S. Fitchett
Northampton	
Dr. J. R. Mapp	Dr. S. K. Ames
Northern Neck	
Dr. J. Motley Booker	Dr. Robert Booker
Dr. A. B. Gravatt, Jr.	Dr. M. B. Lamberth
Dr. C. Y. Griffith	Dr. Harper Ward
Dr. Paul C. Pearson	Dr. H. E. Sisson
Orange	
Dr. H. C. McCoy	Dr. J. G. Bruce, Jr.
Patrick-Henry	
Dr. B. A. Hopkins	Dr. J. H. Irby
Dr. Henkel Price	Dr. W. N. Thompson
Princess Anne	
Dr. Ira Hancock	Dr. Floyd Dormire
Richmond	
Dr. H. W. Decker	Dr. E. E. Haddock
Dr. R. D. Butterworth	Dr. A. L. Herring, Jr.
Dr. T. Dewey Davis	Dr. Frederick P. Moore
Dr. Emily Gardner	Dr. Harvey B. Haag
Dr. Howard R. Masters	Dr. John D. Call
Dr. William R. Morton	Dr. George D. Vaughan
Dr. Kinloch Nelson	Dr. E. S. Robertson
Dr. C. L. Outland	Dr. Morris Pinckney
Dr. Frank Pole	Dr. E. M. Holmes, Jr.
Dr. J. H. Reed	
Dr. R. C. Siersema	Dr. Alex. G. Brown, III
Dr. Harry J. Warthen, Jr.	Dr. Rex Blankinship
Dr. T. B. Washington	Dr. William A. Johns
Dr. Ennion S. Williams	Dr. Garland Harwood

Delegates	*Alternates*
Roanoke	
Dr. John Boyd, Sr.	Dr. George Hurt
Dr. C. T. Burton	Dr. R. Earle Glendy
Dr. Frank A. Farmer	Dr. Reverdy H. Jones
Dr. M. A. Johnson, Jr.	Dr. E. G. Gill
Dr. Charles H. Peterson	Dr. E. Berkley Neal
Dr. Harry B. Stone, Jr.	Dr. Frank Helvestine
Rockingham	
Dr. T. F. Kennan	Dr. Hunter McClung
Russell	
Dr. W. C. Elliott	Dr. R. F. Gillespie
Scott	
Dr. A. M. Wallace	Dr. W. L. Griggs, Jr.

Delegates	*Alternates*
Southwestern Virginia	
Dr. E. L. Bagby	Dr. E. S. Carr
Dr. R. D. Campbell	Dr. J. J. Eller
Dr. James Chitwood	Dr. Fred Delp
Dr. Glenn Cox	
	Dr. Beverly Eckles
Dr. Harry Hayter	Dr. Charles Harkrader
Dr. George B. Kegley	
Dr. C. D. Moore	Dr. S. W. Huddle
Dr. D. S. Phlegar	Dr. A. M. Showalter
Tazewell	
	Dr. Mary E. Johnston
Warwick	
Dr. A. A. Creecy	
Dr. E. B. Mewborne	
Williamsburg-James City	
Dr. Joseph E. Barrett	Dr. E. H. Beamer-Maxwell

One-Day Aureomycin Treatment for Gonorrhea.

A 98 per cent cure rate in gonorrhea following administration of a one-day treatment with aureomycin, a newer antibiotic drug, is reported by Drs. Calvin H. Chen and Robert B. Greenblatt and Robert B. Dienst, Ph.D., of the University of Georgia School of Medicine. (J.A.M.A., June 24.)

"A series of 100 unselected patients with gonorrhea was arbitrarily divided into two groups of 50 patients each."

"Group A was given aureomycin orally three times daily for two days and group B was given the same daily dose for one day. The results obtained from these two groups were identical. There was one failure in each group. Thus, the percentage of cure was 98 in each group.

"Toxic reactions were few and not serious. In several patients, the disease, which had failed to respond to penicillin and other medication, yielded to aureomycin treatment.

"It is apparent that orally administered aureomycin in the doses employed in this study is at least as effective as one injection of penicillin against gonorrheal infections."

Evaluation of the effect of aureomycin treatment was based on results of a physical examination given a week after treatment was begun. Duration of the disease varied from one day to two months. However, duration of the disease did not seem to have any influence on the speed of recovery.

Of the entire group of patients, 83 were men and 17 were women. In 10 of these patients, the condition had failed to respond to penicillin, chloramphenicol or sulfa drugs.

Aureomycin Shows Promise as Treatment for Mumps.

Results obtained in treating three patients with mumps suggest that aureomycin, an antibiotic drug, may be of definite value in this disease. Two women treated for mumps with aureomycin showed definite improvement within 24 hours after receiving the first dose of aureomycin, Drs. Wilfred D. Langley and John Bryfogle say in the August 12 J.A.M.A. Aureomycin was given to both women on the second day after swelling in the glands began.

Another patient, a man, received the drug less than 24 hours after symptoms of mumps were first noticed. Forty-eight hours after treatment was begun, he showed definite improvement.

"While no definite conclusions can be drawn from treating three patients in the manner described, the results obtained would suggest that aureomycin may be of definite value in this disease," the doctors point out.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President Mrs. C. E. Holderby, Hilton Village
President-Elect Mrs. C. M. McCoy, Norfolk
Vice-Presidents Mrs. W. J. Sturgis, Nassawadox
Mrs. M. W. Glover, Arlington
Recording Secretary Mrs. Thomas S. Chalkley, Richmond
Corresponding Sec'y Mrs. J. W. Carney, Newport News
Treasurer Mrs. K. W. Howard, Portsmouth
Parliamentarian:
Mrs. T. N. Hunnicutt, Jr., Newport News
Historian Mrs. M. H. Harris, West Point

Information

Twenty-Eighth Annual Meeting
Roanoke, Virginia October 8-11, 1950
Headquarters: Hotel Roanoke and Hotel Patrick Henry

Registration at Hotel Roanoke
Monday, October 9th, 9:00 A. M.—4:00 P. M.
Tuesday, October 10th, 9:00 A. M.—12:00 Noon

A most cordial invitation is extended to all women who are Auxiliary members, wives or guests of physicians attending the convention of the Medical Society of Virginia, to participate in all social functions and attend the general session.

Places of meetings and functions are stated in the program. Please register early and obtain your badge and program.

Members of the Hospitality and Information Committees will be at the registration desk and will be glad to help in any way.

All meetings and social affairs will begin at the time scheduled. Please be prompt.

Local Committee on Convention Arrangements
General Chairman—Mrs. Fred E. Hamlin.
Vice-Chairman—Mrs. C. T. Burton.
Publicity.
Pages.
Flowers.
Credentials and Registration.
Hospitality.
Information.
Fashion Show.
Luncheon, Tuesday, October 10.
Past Presidents' Breakfast—Mrs. J. E. Hamner.
Timekeepers.
Tellers.

Pre-Convention Board Meeting
Monday, October 9th, 4:00 P. M.
Red Room, Hotel Patrick Henry

Presiding—Mrs. C. E. Holderby, President.
Invocation—Mrs. W. J. Sturgis.

Presidents of County Auxiliaries, State Officers and Chairmen of all Committees are expected to attend.

Program

Tuesday, October 10th
9:00 A. M.

Formal Opening of the Twenty-Eighth Annual Convention
Red Room, Hotel Patrick Henry

Presiding—Mrs. C. E. Holderby, President.
Invocation—Mrs. Frederick Finch, Richmond.
Auxiliary Pledge led by—Mrs. Mallory P. Andrews, Norfolk.
Greetings.
Address of Welcome—Mrs. Maynard R. Emlaw, Richmond.
Response—Mrs. R. H. Detwiler, Arlington.
Introductions—Mrs. C. E. Holderby.
Roll Call—Mrs. Thomas S. Chalkley, Secretary.
In Memoriam—Mrs. R. M. Reynolds, Norfolk.
Report of General Chairman—Mrs. Fred E. Hamlin, Roanoke.
Minutes of the 27th Annual Meeting—Mrs. Thomas S. Chalkley.
Minutes of the June Conference—Mrs. Thomas S. Chalkley.
Credentials and Registration.
Report of President—Mrs. C. E. Holderby.
Report of Officers.
Report of Chairmen of Standing and Special Committees.
Reports of County Auxiliary Presidents.
Report of Council to the Woman's Auxiliary to the Southern Medical Association—Mrs. W. R. Payne, Newport News.
Report of Annual Convention to the American Medical Association—Mrs. J. L. DeCormis, Accomac.
Unfinished Business.
New Business.
Committee on Resolutions—Mrs. Chester D. Bradley, Newport News.
Report of Nominating Committee—Mrs. R. M. Reynolds, Chairman.
Election of Officers.
Installation of Officers—Mrs. T. N. Hunnicutt, Jr., Parliamentarian.
Presentation of Gavel—Mrs. C. E. Holderby.
Address by—Mrs. Robert C. Haynes, President of the Woman's Auxiliary to the Southern Medical Association.
Adjournment.

Annual Luncheon
1:00 P. M., Room __, Hotel Roanoke

In honor of specially invited guests of the Medical Society and Auxiliary with their husbands and wives; Honorary Members; Past Presidents of the Auxiliary; the retiring and incoming Presidents of the Medical Society and their wives; the Presidents of the Auxiliaries to the American Medical Association and the Southern Medical Association and the members of the Advisory Council and their wives.

Invocation—Mrs. Walter A. Porter, Hillsville.

Greetings—Dr. W. C. Caudill, President, Medical Society of Virginia.
Fashion Show.
Address—Mrs. Arthur Herold, President, Woman's Auxiliary to the American Medical Association.
Presentation of President's Pin—Mrs. C. E. Holderby.
Inaugural Address—Mrs. C. M. McCoy, Norfolk.

PAST PRESIDENT'S BREAKFAST

8:30 A.M. Wednesday, October 11, Room __, Hotel Roanoke—Mrs. J. E. Hamner, Chairman.

POST CONVENTION BOARD MEETING

9:30 A.M. Room __, Hotel Roanoke—Mrs. C. M. McCoy, President, presiding.

Presidents of County Auxiliaries, State Officers and Chairmen of all Committees expected to attend.

BOOK ANNOUNCEMENTS

Medicine of the Year. Second Issue. 1950. Editorial Direction—JOHN B. YOUMANS, M. D., Dean, School of Medicine, Vanderbilt University. J. B. Lippincott Company, Philadelphia, 1950. 204 pages. Cloth. Price $5.00

Physician's Handbook. By MARCUS A. KRUPP, M.D., Assistant Clinical Professor of Medicine, Stanford University School of Medicine, and Director, Clinical Pathology, VA Hospital, San Francisco; NORMAN J. SWEET, M.D., Assistant Professor of Medicine, University of California School of Medicine, San Francisco; ERNEST JAWETZ, Ph.D., M.D., Associate Professor of Bacteriology and Lecturer in Medicine and Pediatrics, University of California School of Medicine, San Francisco; and CHARLES D. ARMSTRONG, M.D., Clinical Instructor in Medicine, Stanford University School of Medicine. Sixth Edition. University Medical Publishers, Palo Alto, California. 1950. 380 pages. Price $2.50.

The Merck Manual of Diagnosis and Therapy. A Source of Ready Reference for the Physician. Eighth Edition. Merck & Company, Inc., Rahway, N.J. 1950. 1592 pages. Cloth. Price—Regular Edition, $4.50; Thumb-Index Edition, $5.00.

The Mask of Sanity. An Attempt to Clarify Some Issues About the So-Called Psychopathic Personality. By HERVEY CLECKLEY, M.D., Professor of Psychiatry and Neurology, University of Georgia School of Medicine, Augusta, Georgia. Second Edition. St. Louis, The C. V. Mosby Company. 1950. 569 pages. Cloth. Price $6.50.

Primer of Allergy. By WARREN T. VAUGHAN, M.S., M.D., Richmond, Va. Revised by J. HARVEY BLACK, M.D., Dallas, Texas. Third Edition. St. Louis, C. V. Mosby Company, 1950. 175 pages with illustrations by John P. Tillery. Cloth. Price $3.50.

This little book is a satisfactory and popular manual for allergic patients. The changes from the second edition are minor and few. They would not justify purchase of the new edition if the interested person possesses the previous one.

M. E. B. O.

Urological Surgery. By AUSTIN GRAHAM DODSON, M. D., F.A.C.S., Richmond, Virginia. Professor of Urology, Medical College of Virginia; Urologist to the Hospital Division, Medical College of Virginia; Urologist to the Crippled Children's Hospital, St. Elizabeth's Hospital, St. Luke's Hospital, and McGuire Clinic. Second Edition, St. Louis, The C. V. Mosby Company. 1950. 855 pages with 645 illustrations. Cloth. Price $13.50.

The second edition of Urological Surgery, like the first edition, is a thorough coverage of the surgical aspects of Urology. It is particularly adapted to the doctor who is in training for the practice of Urology and its real value lies in its unusual readability. To keep the book current, important changes and additions have been made, including revised discussions of pre- and post-operative care, genito-urinary tuberculosis, malignancy of the prostate and bladder, and retropubic surgery.

R. P. M.

Saw-Ge-Mah (Medicine Man). By LOUIS J. GARIEPY, M.D., Detroit, Michigan. Northland Press, St. Paul, Minnesota. 1950. 326 pages. Cloth. Price $3.00.

This is a novel of modern medicine and the men who serve humanity. Saw-Ge-Mah, which in the Ottowa Indian tongue means "Medicine Man", is the story of a young man who struggled against almost hopeless odds to make his long-desired dream come true.

Human Growth. The Story of How Life Begins and Goes On. Based on the Educational Film of the Same Title. By LESTER F. BECK, Ph.D., Associate Professor of Psychology, University of Oregon. With the Assistance of Margie Robinson, M.A. Harcourt, Brace and Company, New York. 1949. 124 pages. Cloth. Price $2.00.

This timely little book should aid many parents in answering sex questions in a clear natural manner.

It will fit into the program of any high school that has followed a plan of integrating sex information in the biology, agriculture, and physical education classes. It should not be placed in the hands of children as a substitute for emotional guidance.

OLIVE J. FAULKNER, M.S., R.N.

EDITORIAL

James Marion Sims (1813-1883)

IN the first half of the 19th Century there was no such thing as gynecology in the modern meaning of the word. Obstetrics, when taught at all, was taught by the professor of anatomy, or by the professor of jurisprudence, or of pediatrics. Until Thomas Young's time, obstetrics at Edinburgh was an optional course. Gynecology was not taught at all and was practiced by the abdominal surgeon. Birth injuries were common and no one made any attempt to repair them. The pitiable condition of these women was described in the sketch on Mettauer, as he was the first to describe an operation that was uniformly successful in curing such injuries.

Marion Sims has been called the Father of Modern Gynecology, and the Medical Prima Donna of the 19th Century. The one describes his work, and the other, his character. James Marion Sims was born in Lancaster County, South Carolina. His father was an uneducated farmer, who later became sheriff of the county. His mother, Mahala Mackey, was educated and redheaded. Both parents were determined that Marion should have an education. His father wanted him to be a lawyer, his mother, a preacher. Marion had no higher ambition than being a clerk in a store. However, he compromised on medicine. The result was that he went to college in Columbia, South Carolina, "read" medicine under Dr. Churchill Jones in Lancaster, attended the South Carolina Medical College for one session of 14 weeks and graduated at Jefferson in Philadelphia, in 1835. He returned to Lancaster and "hung out his shingle." Losing his first two patients, both of cholera infantum, he took down his sign in the night and threw it down a well. Alabama, at that time, was the frontier. At the first opportunity he went to Alabama and located at Mount Meigs. Here he almost died of malaria. In a year's time he moved again, this time to Chibahatchee. This was also a paludal area and after he and his wife had severe attacks of malaria, he moved to Montgomery. Here he acquired a reputation on account of his bold and successful surgery—strabismus, clubbed feet, hare lip, and resection of the upper jaw. His first medical publication was in connection with the cure of a cleft palate. His next publication was upon *Trismus Nascentium* which he "cured" by laying the infant on its side instead of on its back, as was customary in those days.

In 1845 Sims encountered a surgical problem that stumped him. He was called to help deliver a 17 year old negro girl who had been in labor for three days. This he effected with forceps. Five days later Anarcha, for this was the Anarcha who afterwards became famous, developed incontinence of urine and feces. Sims told her owner that her condition was incurable. Within a month another case of vesico-vaginal fistula appeared, and before another month went by, a third. He gave the same unfavorable prognosis to the masters of these poor girls, but before Lucy, the third patient had time to go home, he had learned how to visualize the vagina. A Mrs. Merrill was thrown from her horse and suffered a traumatic displacement of her uterus. Following the advice of his old teacher in Charleston, South Carolina, Dr. Priollau, he placed her in the knee chest position and pushed up the uterus with his fingers in the vagina. The patient was dramatically relieved. When she relaxed to her side there was a loud sound of escaping air. Sims understood at once what had happened; the retraction of the perineum allowed air to enter the vagina and caused it to balloon out. On his way home he bought a pewter spoon which he bent at right angles for a retractor. He put Lucy in the knee chest position and retracted the perineum with

the handle of the spoon and exposed the fistula perfectly. In his enthusiasm he sent for Anarcha and Betsy, and built a small hospital in his back yard and prepared to cure vesico-vaginal fistulae. In the meantime, several other slaves were sent to him to cure. But the cure was not so simple as he had imagined. He modified his technic in various ways and kept operating upon his willing patients—29 times on Anarcha alone. It was not until he tried silver wire sutures, in May, 1849, that he cured a single case, first Anarcha and then Betsy and Lucy.

In the meantime he had lost his money, his prestige and his health. He contracted dysentery complicated by avitaminosis. It has been suggested that his malady was pellagra. In his search for health he went first to Berkeley Springs and took several of his uncured patients with him, thinking that he would improve enough to operate on them, but such was not to be. Finally, by chance, he heard of Cooper's Well in Mississippi, which was run by a Methodist preacher. Cooper advised him to eat generously of fresh meat and salt pork. In 27 days he gained 27 pounds, the diarrhoea was checked and he had a ravenous appetite. However, when he left Cooper's Well at the end of 27 days he relapsed. According to his autobiography he went to New Orleans, New York and Philadelphia. It was in Philadelphia that he became bed-ridden and, thinking he would die, he wrote his classic report on vesico-vaginal fistula which was published in the *American Journal of the Medical Sciences,* January 1852.

After four years of poor health, Sims decided that he could no longer live in the South. He sold out and moved to New York. Here he demonstrated his operation to the leading surgeons but could not get a place on the staff of any New York hospital. Fate evidently had a greater role for him to play. Had he gotten an entre in any existing hospital, he probably would not have founded the Woman's Hospital and had he not established this center for study of woman's complaints, he would not have become the Father of Modern Gynecology. The task of finding support for a special hospital for women was indeed an arduous one, and before it was accomplished he had used up all of his money and also his wife's money, and was forced to rent out most of his house. His health was none too good. He was having trouble with locomotion, and the least stumble caused him to fall, and when he fell, he had trouble getting to his feet again. Once he fell in the gutter and the policeman who picked him up thought that he was drunk. (Sims rarely touched liquor of any kind.) At last he accomplished the seemingly impossible, and the Woman's Hospital of the State of New York was started with a board of prominent ladies and a committee of influential men and an appropriation from the State Legislature.

With a place in which to work, Sims branched out into treating all sorts of women's diseases. He devised an operation for the cure of dysmenorrhoea and sterility. He treated vaginismus and an occasional case of cancer in spite of the fact that the governing bodies frowned on the admission of cancer cases to the Woman's Hospital. This opposition led to the founding of the special hospital for the treatment and investigation of cancer in women under the instigation of Sims. Sims also fell out with the governing boards over the number of visiting doctors who were allowed in the operating rooms. This squabble led to his resignation.

At the approach of the Civil War his position in New York became intolerable. He decided it was time to go to Europe. Everywhere, but especially in Paris, he received a real ovation. He built up a practice among the European nobility that was even more lucrative than his practice in New York. After two years he returned to New York

for his family and they settled in Paris until after the war. For the rest of his life he divided his time between New York and Paris.

Marion Sims' life was full of contrasts and inconsistences. He had a charming personality and made friends easily. He was as great a showman as P. T. Barnum, whom he knew and admired. He loved people but could not get along with those with whom he was closely associated, as shown by the bitter quarrels with Bozeman, W. O. Baldwin, Emmet, Peaslee and Thomas, and the lay boards of the Woman's Hospital. His public life (and his medical conduct was public in an unusual measure) was characterized by gaucherie, but his private life was characterized by charm and elegance. When he became wealthy, he entertained in a regal manner. He was extremely generous. He was not averse to letting the world know that he had famous patients and who they were. He guarded the medical secrets of the Empress Eugenie and the Duchess of Hamilton, but published in the newspapers an account of Adelina Patti's illness when she went to Sir James Y. Simpson. When President Garfield was shot, he advised his surgeons how to treat gunshot wounds of the abdomen and did it by means of press dispatches from Paris. When he was a school boy he was averse to writing essays and could not be made to do so. For graduation at the College of South Carolina two were required of him. A fellow student wrote them and Sims signed them and took credit for writing them. Yet when he had tasted printer's ink he was prone to rush into print prematurely. Early in his career he saw several cases of trismus nascentium. The spasms were relieved when he turned the infant from its back and laid it on its side. He published in the *American Journal of Medical Sciences* that the cause of the convulsions was pressure on the base of the brain. His classic paper on vesico-vaginal fistula was published when he had cured only three cases. According to Bozeman, some of his failures were never published until Bozeman himself published them. The New York Academy of Medicine tried him and censored him for violating the American Medical Association code of ethics and in 1875, The American Medical Association elected him its president.

The most beautiful facet of his many sided character was his devotion to his family. Too frequently when a man gets up in the world, his wife fails to keep up with him. Theresa Jones and Marion Sims were childhood sweethearts. Theresa was the daughter of a well-to-do doctor and she was raised in a home of culture and refinement. It took three years to gain the consent of Mrs. Jones to the wedding. Theresa evidently took her marriage vows seriously, for she followed her husband in sickness and in health, in poverty and wealth, until they were parted by death. Thoroughbred that she was, she took the swamps of Alabama, the varying fortunes of Sims in New York and the courts of Europe in her stride. She was equally at home in the rooming house in New York or the court of Napoleon III in Paris. Regardless of her surroundings she kept her poise and equanimity and did much to keep her husband on an even keel. Truly she belongs among the great women of medicine. In spite of Sims' mercurial nature, they were lovers to the very end.

Even in death Sims ran true to form. Although his health had been failing for some time he continued to work, and died in his sleep after seeing patients that day. He had left directions that there be an autopsy and this was performed by Dr. William H. Welch. The cause of death was coronary occlusion. There had been only one previous case reported but now it has become the most common cause of physicians' death. Again Marion Sims was a pathfinder. He taught doctors how to die.

This is the 15th of a series "Doctors for whom the public should be thankful".

Charles James Andrews, M.D.
1876-1950

AFTER a long illness, Dr. Andrews died at his home in Norfolk, Monday, June 19th. Charles James Andrews was born in Bedford County, September 20, 1876, the son of William McKendree Andrews and Susan (Williamson) Andrews. He was educated at New London Academy, Bedford, and graduated in medicine at the Medical College of Virginia in 1902. In 1902-03 he was Interne and in 1903 House Surgeon at St. Vincent de Paul Hospital in Norfolk. Later he served as Interne at the New York Lying-in Hospital. Returning to Norfolk in 1904, he engaged in private practice, becoming interested more and more in obstetrics and gynecology. He was Director of the Department of Obstetrics and Gynecology at the Norfolk General Hospital, consulting obstetrician at the Florence Crittenton Home and civilian consultant in obstetrics and gynecology, U. S. Naval Hospital in Portsmouth. He was a Diplomate of the American Board of Obstetrics and Gynecology, and was a Past-President of the Norfolk County Medical Society, of the Tri-State Medical Association of Virginia and the Carolinas, and of the Virginia Obstetrical and Gynecological Society. In 1948, he became President-elect of the South Atlantic Obstetrical and Gynecological Association, but was too ill to deliver his presidental address in February, 1950.

Dr. Andrews was a loyal member of the Medical Society of Virginia and for years was an active member of its Maternal Health Committee. For several years he was its Chairman. He contributed articles to the *Monthly* and other medical journals, notably on Krukenberg tumors and on management of the third stage of labor. He had a great deal to do with the lowering of maternal mortality in Virginia.

Dr. Andrews was a public spirited citizen and was a director of the Norfolk Association of Commerce. As chairman of its health committee, he was largely instumental in getting pasteurized milk for Norfolk.

In 1914 he married Miss Jean Cooke of Norfolk. He is survived by his wife and two sons. The two sons, Mason and William, are doctors. His eldest son and namesake was killed in the Italian Campaign of World War II.

Railroad Travel and the Aged

IT is quite apparent, when one travels, that our population is aging. Many more old people are traveling than ever before, and rightly so. One of the problems of the geriatrician is to find new interests for his patients, and seeing new places has a well-nigh universal appeal. The railroads, however, have made no effort to make it easier for old people to travel.

In a recent trip to the meeting of the American Medical Association, we were reminded many times of the tragic end of Dr. G. Paul LaRoque, who in 1934, dropped dead climbing a ramp in the station in Cincinnati. The railroads seem not to care a hoot for their patrons. They provide trucks for their employees to haul the baggage to and from the trains, and rightly so. Often these trucks are power driven. Their patrons have to lug their baggage to their cars by hand when a red cap is not available. Moreover, the trains are stopped at the station so that the engine, baggage and express cars are conveniently located. The passengers have to walk a country mile to get to the Pullmans. The trains are so long that part of this mile long walk is often beyond the station platform and if it is raining, it is just too bad. The long walk cannot be taken leisurely. One must hurry around or over baggage piled up in the walkway while the

owners are off looking for a red cap. The ramps have grown longer and steeper. Occasionally there is an Escalator but such is the exception rather than the rule. Finally, as if you were not hot and bothered enough, you get a dose of steam or radiant heat as you pass the engine up close to the station where the passenger cars ought to be. Not content with the suffering they inflict on their patrons in the station and on (and beyond) the platforms, the railroads have invented little annoyances of various kinds which they spring on their patrons after they get in the coaches and settle down to catch their breath. In New England, for instance, when the conductor collects tickets in the coaches he gives out advertisements of a New York hotel which tells in large letters the number of baths, etc., and in small letters—much too small for an old person to read on a train, that you must keep this ticket at all times, or else you will have to pay your fare again.

Travel agents should keep a list of places where traveling is difficult. From our recent experiences, we would nominate the following: Washington, because of its poor redcap service; San Francisco, because of the long walk and steep climb to the ferry at Oakland; Victoria, for the steep climb in order to get off the steamer and St. Paul for the steep ramp from the track to the station. In addition, the superheated "air conditioned" cars and dining cars are hard on everyone, old and young alike. For fully one third of the distance going and coming, we were in cars whose air conditioning was out of order.

Roshier Welsh Miller, M.D.
1870-1950

DR. ROSHIER MILLER, past-President of the Medical Society of Virginia and one of its youngest and most popular Emeritus Members, died July 14th shortly after a traffic accident east of Petersburg. He was thrown from his car, which he was driving, and died in a Petersburg Hospital fifteen minutes after the accident.

Dr. Miller was born in Washington, D.C., January 31, 1870, the son of John Isaac and Martha Smoker Miller. He was educated at Quaker Academy in Newtown, Pennsylvania, and at Shorlidges Academy at Media. He attended the Philadelphia College of Pharmacy and Science, where he had also private tutoring in physics, mathematics, and economics. In 1894 he began his long connection with the University College of Medicine, graduating from the School of Pharmacy in 1895 and from the School of Medicine in 1897. The following autumn he began to teach pharmacy, chemistry and nervous and mental diseases. At one time he was Dean of the Pharmacy Faculty. At the time of his death he was Emeritus Professor of Materia Medica and Therapeutics. He was an outstanding teacher.

His services to the Alumni Association of the Medical College of Virginia were equally outstanding. He was past-President and Chairman of the Alumni Fund. At the time of his death he was Secretary of the Association. When he had served on the Board of Trustees as long as the constitution permitted, he was made Emeritus Member. When the main building of the University College of Medicine burned in 1910, he took an active part in the rebuilding of McGuire Hall, not only in fund raising but also in supervision of the construction. In 1913, when the two medical schools were consolidated, he transferred his loyalty to the Medical College of Virginia.

The experience Dr. Miller had gained in the rebuilding of the University College of Medicine was utilized when the Richmond Academy of Medicine undertook to build a home for itself. Dr. Miller was Chairman of the Building Committee. The corner-

stone was laid in 1932. Later, he served on the House Committee and was Chairman for years. In recognition of his outstanding work he was elected President of the Academy in 1935. Dr. Miller was an efficient committeeman and it was a pleasure to serve on a committee with him.

For many years Dr. Miller was a member of the Council of the Medical Society of Virginia and served on many important committees, notably the Budget Committee and the Committee on The History of Medicine in Virginia. He was Chairman of the Committee for Study of Problems of Negro Physicians. In 1941 he was elected President of the Medical Society of Virginia and served for the session 1941-42.

A fourth aspect of Dr. Miller's activities centered about the Richmond School System. He served on the School Board for 26 years and as its Chairman for 18 years. He was especially interested in adult education and in manual training. He resigned from the School Board in 1946. The following year he resigned from his teaching at the Medical College of Virginia but he continued his general practice until he died.

Dr. Miller is survived by one daughter, Mrs. W. Hughes Evans of Richmond; one son, Staff Sergeant Roshier Miller, U. S. Air Force; two sisters, Mrs. Walter Ranch of Westchester, Pa. and Mrs. Aldus Seldomridge of Honeybrook, Pa. and by two grandchildren.

Progress Report on American Medicine

READ President Earnest E. Irons' progress report on American Medicine in the July 15th issue of *The Journal of the American Medical Association* (pages 977-979). He calls attention to the importance of watching the "fringe bills" that have been introduced in such numbers in the Congress. In times of crises, such as we are facing now in connection with our policing Korea, the situation seems made especially for (if not by) socialists and communists to slip in their favorite measures. We must be on the alert to oppose all un-American bills.

SOCIETY PROCEEDINGS

Virginia State Board of Medical Examiners.

At the meeting of the Board in Richmond, June 22-24, 1950, there were

Licensed by Reciprocity

Medicine and Surgery	78
Homeopathic Medicine & Surgery	2

Licensed by Examination

Medicine and Surgery	127
Osteopathy	1
Chiropodists	24

LICENSED BY ENDORSEMENT OF CREDENTIALS:

Dr. Samuel Webster Adams, Jr., Emporia.
Dr. Victor Franklin Albright, Winchester.
Dr. John Hamilton Allan, Philadelphia, Pa.
Dr. William Clayton Anderson, Jr., Winchester.
Dr. William Dulaney Anderson, Norton.
Dr. Frank Louis Beckel, Roanoke.
Dr. Earl Ray Beets, Harrisonburg.
Dr. Vernard Franklin Bond, Jr., Arlington.
Dr. Donald Leon Brawner, Lynchburg.
Dr. Ward B. Breidenthal, Richmond.
Dr. James Duncan Brew, Jr., Arlington.
Dr. Dwight J. Brown, Jr., Charlottesville.
Dr. Samuel Bland Brown, Lynchburg.
Dr. William M. Bruch, Bluefield, Va.-W. Va.
Dr. Stanley Woodruff Burwell, Lynchburg.
Dr. Lloyd Ambrose Busch, Jr., Fredericksburg.
Dr. Joseph Warren Camp, Whittier, Calif.
Dr. Alice Drew Chenoweth, Arlington.

Dr. Lyndon Myers Conley, Sneedville, Tenn.
Dr. Stuart Gray Coughlan, Staunton.
Dr. James Breckenridge Dalton, Jr., Richmond.
Dr. James F. Dowd, Arlington.
Dr. Ernest Goodall Edwards, Jr., Charlottesville.
Dr. Jesse Cox Ellington, Lynchburg.
Dr. John F. Fitzpatrick (Homeopath), Danville.
Dr. Leon Lloyd Gardner, Richmond.
Dr. Arnold H. Gould, Washington, D. C.
Dr. Luther Wilson Gray, Washington, D. C.
Dr. Clark Henry Hagenbuch, Roanoke.
Dr. George Douglas Hayden, Richmond.
Dr. John M. Huff, Norfolk.
Dr. Alfred Edison Jackson, Washington, D. C.
Dr. Millard Filmore Jones, Portsmouth.
Dr. Samuel Luther Keller, Waukegan, Ill.
Dr. George Washington Kelly, Jr., Pulaski.
Dr. Ogden Doremus King, Chevy Chase, Md.
Dr. Bernard McDowell Krug, Washington, N. C.
*Dr. Norman Bruce Kyles, Raleigh, N. C.
Dr. Robert Vernon Larrick, Winchester.
Dr. Willis Edward Lemon, Rochester, Minn.
Dr. Stanley M. Levenson, Richmond.
Dr. Vernon W. Lippard, Charlottesville.
Dr. John Aloysius Long, Washington, D. C.
Dr. Henry Marshall Lowden, Washington, D. C.
Dr. Harry Pearce Maccubbin, Winchester.
Dr. William Howard Michael, Suffolk.
Dr. Robert Treadwell Miller, Arlington.
Dr. Robert A. Muilenburg, Washington, D. C.
Dr. William Francis Murphy, Norfolk.
Dr. J. Treacy O'Hanlan, Waynesboro.
Dr. John B. O'Neill, St. Petersburg, Fla.
Dr. Edwin Brown Parkinson, Richmond.
Dr. Wendell J. Pile, Williamsburg.
Dr. James Chilton Quick, Richmond.
Dr. Arnold J. Rawson, Norfolk.
Dr. Adrian Recinos, Jr., Falls Church.
Dr. Gilbert Joseph Rich, Roanoke.
Dr. John George Ringler, Manassas.
Dr. Marshall C. Sanford, Washington, D. C.
Dr. Charles W. Schiffert (Homeopath), Fordwick.
Dr. Gordon E. Shull, Stonega.
Dr. William Harry Robison, New York, N. Y.
Dr. Joseph Megeath Rogers, Hamilton.
Dr. Simon Russi, Richmond.
Dr. Thomas George Scott, Roanoke.
Dr. LeRoy D. Soper, Chatham.
Dr. George Tievsky, Washington, D. C.
Dr. Clyde W. Vick, Jr., Petersburg.
Dr. William Fremont Wagner, Richmond.
Dr. George Davis Weickhardt, Washington, D. C.
Dr. R. Lomax Wells, Washington, D. C.
Dr. William B. Wild, Harrisonburg.
Dr. Egbert Vincent Wiltshire, Washington, D. C.
Dr. Alfred L. Wolfe, Jr., Birmingham, Ala.

*License withheld until he received first citizenship papers May 10, 1950, and License issued on this date.

Dr. Jack Dunn Wycoff, Abingdon.
Dr. John DeButts Wynkoop, Leesburg.
Dr. Richard B. Wissinger, Covington.
Dr. Thomas E. Whitaker, II, Arlington.
Dr. Robert Hoyt Yoe, Charlottesville.
Dr. Raymond Murray Yow, Portsmouth.
Dr. Allan Zellis, Arlington.

Licensed by Examination:

Dr. Robert Andrew Abernathy, Jr., Lynchburg.
Dr. William Burdette Adams, Richmond.
Dr. Earl Douglas Allara, Iaeger, W. Va.
Dr. Nicholas Ivan Ardan, II, Clifton, Staten Island, N. Y.
Dr. Thomas William Ayres, Richwood, W. Va.
Dr. Rudolph Vincent Basso, Petersburg.
Dr. Ernest Lovell Becker, Richmond.
Dr. Scott Cree Brainard, New Haven, Conn.
Dr. William Maury Bangel, Portsmouth.
Dr. Charles Old Barclay, Jr., Portsmouth.
Dr. Wyndham Bolling Blanton, Jr., Richmond.
Dr. Russell Vernon Bowers, Richmond.
Dr. Leroy Parry Bragg, Richmond.
Dr. William Russell Brooks, Radford.
Dr. George Allen Buckmaster, Fort Lewis, Wash.
Dr. George Minson Bullard, Roseboro, N. C.
Dr. Henry Armistead Bullock, Jr., Richmond.
Dr. James Campbell Cantrill, Georgetown, Ky.
Dr. Douglas Willits Carr, Norton.
Dr. John Baldwin Catlett, Richmond.
Dr. James Colvin Causey, Baltimore, Md.
Dr. Robert Thomas Cauthorne, Rochester, N. Y.
Dr. Thornton Ritenour Cleek, Staunton.
Dr. Everett Lee Coffey, Roanoke.
Dr. John A. C. Colston, Jr., Baltimore, Md.
Dr. Robert Noble Counts, Portsmouth, Ohio.
Dr. Paul Tulane Craddock, Lynchburg.
Dr. Fred Selden Cruser, Norfolk.
Dr. John Caulfield Dalton, Norfolk.
Dr. Evelyn Patton Daniel, Louisa.
Dr. Griffith Boyd Daniel, Louisa.
Dr. James Andrew DeLozier, Blue Ridge Sanatorium, Charlottesville.
Dr. Marion Miller Faris, Charlottesville.
Dr. Harrison Fertig, Plainfield, N. J.
Dr. Hugh Fitzpatrick, III, Philadelphia, Pa.
Dr. Robert Jerold Frank, Boston, Mass.
Dr. David Charles Forrest, Roanoke.
Dr. Walter Buhrman Garland, Jr., Roanoke.
Dr. Lawrence Noah Gilliam, Wise.
Dr. Claude Robertson Garfield, Arlington.
Dr. William Wesley Gillespie, Boissevain.
Dr. John Titus Glick, Jr., Richmond.
Dr. Edwin Herman Gray, Phoebus.
Dr. Helen Elizabeth Hall, Raleigh, N. C.
Dr. James King Hall, Jr., Richmond.
Dr. Thomas Marion Hall, Richmond.
Dr. Thomas Brock Hardman, Morgantown, W. Va.
Dr. Ward Harshbarger, Jr., St. Albans, W. Va.
Dr. Thomas Bowles Hedrick, Richmond.

Dr. Reginald Buchanan Henry, Jr., Norfolk.
Dr. Russell Edward Herring, Jr., Richmond.
Dr. John William Hesen, Jr., Washington, D. C.
Dr. Seth Guilford Hobart, Jr., Charlottesville.
Dr. Joseph Haven Hoge, Jr., Narrows.
Dr. Guy Foster Hollifield, Martinsville.
Dr. James Reuben Holsinger, Broadway.
Dr. Emery Highsmith Honeycutt, Clinton, N. C.
Dr. Herbert Chester Hoover, Richmond.
Dr. Robert Clifton Hughes, Waverly.
Dr. James Morrison Hutcheson, Jr., Galveston, Tex.
Dr. Robert McClain Jamison, Route 2, Covington.
Dr. Ellen Katherine Johnson, Enfield, N. C.
Dr. William Harold Johnson, Route 3, Castlewood.
Dr. Thomas Leland Largen, R.F.D. 2, Hillsville.
Dr. James Laster, Richmond.
Dr. Patricia Ann Lawrence, Charlotte, N. C.
Dr. Ira Clair Liebrand, Charlottesville.
Dr. Jane McMullen, Wellsburg, W. Va.
Dr. Theodore Lathers Marks, USPHS, Seattle, Wash.
Dr. Edward Joseph Mears, Norfolk.
Dr. Paul Randall Marsh, Charlottesville.
Dr. Edgar Lee Marston, Silver Springs, Md.
Dr. Robert T. Melgaard, USPHS, Great Lakes, Ill.
Dr. Eugene Ernest Mihalyka, Baltimore, Md.
Dr. Samuel Edmund Miller, Charlottesville.
Dr. Robert Edgar Mitchell, Jr., Richmond.
Dr. Elma Adolphus Morgan, Jr., Portsmouth.
Dr. Helen Luella Morton, Richmond.
Dr. Donald Stover Myers, Norfolk.
Dr. Mathew E. O'Keefe, Jr., Minneapolis, Minn.
Dr. Beryl Macy Oser, Newport News.
Dr. John William Painter, Richmond.
Dr. Forrest Edwards Peeler, Richmond.
Dr. Lloyd Calvin Peters, Charlottesville.
Dr. John Williams Powell, Richmond.
Dr. Paxton Pitman Powers, Richmond.
Dr. Rupert Wilson Quaintance, Jr., Slate Mills.
Dr. Josiah Frederick Reed, Jr., Harrisburg, Pa.
Dr. James Cipriano Respess, Charlottesville.
Dr. Dorothy Louella Reycroft, St. Louis, Mo.
Dr. Charles Nelson Richards, Jr., Lynchburg.
Dr. Benjamin Price Riley, Jr., St. Albans, L. I., N. Y.
Dr. George Gordon Ritchie, Jr., Richmond.
Dr. William Henry Romm, Norfolk.
Dr. John Bertrand Rose, Jr., Richmond.
Dr. Robert Louis Rowan, Charlottesville.
Dr. Thomas Carroll Royer, Richmond.
Dr. Harvey Brown Ryder, Richmond.
Dr. Joseph Leon Schwarts, Jr., Charlottesville.
Dr. Ralph Mason Scott, Parksley.
Dr. Leo Franklin Sherman, Beckley, W. Va.
Dr. Robert Dayton Shreve, Richmond.
Dr. Donald Gabriel Siegel, Richmond.
Dr. Elmer O. Smith, Jr., Dallas, Tex.
Dr. Eustace Henry Smith, Richmond.
Dr. John Earle Smith, Highland Springs.
Dr. Lawrence Owen Snead, Jr., Richmond.
Dr. Archie Carlisle Stanton, Jr., Norfolk.
Dr. John Moore Stoneburner, Richmond.
Dr. Grady Monroe Strickland, Jr., Norfolk.
Dr. David Valentine Strider, Sewickley, Penna.
Dr. Frank Eugene Taylor, Richmond.
Dr. Genevieve June Thomas, Pittsburgh, Pa.
Dr. Clarence Brock Trower, Jr., Norfolk.
Dr. Thomas William Tusing, New Market.
Dr. Allan Meyer Unger, Richmond.
Dr. Glenn Brady Updike, Jr., Rochester, N. Y.
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Dr. LeRoy Webb, Greenville, S. C.
Dr. Jay Nevin Wemple, Richmond.
Dr. Philip James Winn, IV, Huntington, W. Va.
Dr. James Mounts Wolcott, Jr., Norfolk.
Dr. James Burnley Wood, Charlottesville.
Dr. Paul Howard Wornom, Dare.
Dr. William Geoffrey Wysor, Jr., Richmond.
Dr. Harold Ray Yarbro, Charlottesville.
Dr. Mary E. Zumbrunnen, Parkersburg, W. Va.

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Dr. John A. Spinelli, Cleveland, Ohio.
Dr. Fred Junior Sprecher, Philadelphia, Pa.
Dr. William Slaughter Thornton, Cleveland, Ohio.
Dr. Saul Tunis, Philadelphia, Pa.
Dr. Donald Thomas Wilkshire, Philadelphia, Pa.

The Buchanan-Dickenson County Medical Society

Held its July meeting at the Grill in Grundy on the 20th, nineteen members being present. The guest speaker was Dr. William Parson, professor of medicine at the University of Virginia, who spoke on the subject of Obesity. Delegates and alternates to the State Society meeting were elected at this time. Dr.

J. P. Sutherland of Harman is president and Dr. T. C. Sutherland of Haysi is secretary of the Society.

Augusta County Medical Society.

At the regular quarterly meeting of the Society on August 2, delegates to the State Society meeting were named and Drs. J. Treacy O'Hanlan of Waynesboro and Charles W. Schiffert of Fordwick were admitted to membership.

Officers elected for the coming year are: President, Dr. R. P. Bell, Jr., Staunton; vice-presidents, Dr. J. L. Davis, Waynesboro, J. G. Crawford, Staunton, and Dr. H. F. White, Fishersville; secretary, Dr. Wm. B. Painter, Mount Sidney; treasurer, Dr. Boyd H. Payne, Staunton; and censor, Dr. C. L. Savage, Waynesboro. The retiring president and secretary are Dr. Charles F. Gaylord of Staunton and Dr. Paul A. Woods of Waynesboro.

Alexandria Medical Society.

At a recent meeting of this society, the following were elected as officers for the ensuing year: President, Dr. Wallace E. Baker; vice-president, Dr. Martin Delaney; and secretary-treasurer, Dr. Jerome Baum. All are of Alexandria.

NEWS

The Southwestern Virginia Medical Society

Will hold its regular semi-annual meeting at the Governor Tyler Hotel, Radford on September 28, under the presidency of Dr. Harry Hayter of Abingdon. Dr. Andrew F. Giesen of Radford is secretary. The meeting will start at 2:00 p.m., with papers by Dr. Fred Heath of Blacksburg on a subject pertaining to Public Health; Dr. Fred W. White of Roanoke, whose subject will be "The Surgical Correction of the Deformed and Obstructed Nose"; and Dr. William P. Tice, also of Roanoke, who will speak on "Subarachnoid Hemorrhage from Intercranial Aneurysms". There will also be the annual election of officers, committee appointments, selection of the Spring meeting place, and a movie on a medical subject.

A Social Hour will be held at 6:00 o'clock and the banquet at 7:00. Following the banquet, the scientific program will be resumed with papers by guests: Dr. William Parson, Department of Internal Medicine, University of Virginia, on "Obesity". The second guest will be Dr. Robert C. Lynch, of the Department of Surgery of the Ochsner Clinic and a member of the Surgical Faculty at Tulane School of Medicine, New Orleans. He will speak on "The Present Approach to the Adenomata of the Thyroid."

A large attendance is expected.

American Medical Association.

At the San Francisco meeting of the A.M.A., Dr. Elmer L. Henderson of Louisville, Ky., took office as president, and Dr. John W. Cline of San Francisco was named president-elect. Dr. Cline is a past president of the San Francisco Medical Society and of the California Medical Association.

It was estimated that there was an attendance of between twenty and twenty-five thousand members and guests—the largest attendance in the history of the organization.

Names of Virginians noted on the scientific program are Dr. Everett I. Evans and Drs. William B. Porter, Oscar W. Clarke and Reno Porter, all of the Medical College of Virginia, Richmond, and Drs. Acors W. Thompson and June Carol Shafer of Arlington. Listed with the Scientific Exhibits were Dr. William R. Sandusky of the University of Virginia, Charlottesville, and Drs. H. B. Haag, P. S. Larson and J. K. Finnegan of the Medical College of Virginia, Richmond.

The 1951 meeting of the Association is to be at Atlantic City, and the next Clinical Session, primarily devoted to the interests of the general practitioner, is to be in Cleveland in December.

Blue Ridge Sanatorium,

Just southeast of Charlottesville, opened two floors of a new six-story wing on July 10, which were inspected by a number of State officials and doctors from the University of Virginia. These two floors have a capacity of seventy patients and were all the floors which can be used at this time because the graduate nurse positions have not been filled.

The International College of Surgeons,

United States Chapter, will hold its fifteenth annual assembly in Cleveland, Ohio, October 31 to

November 3, with headquarters at the Cleveland Hotel. Surgical clinics will be held in several Cleveland hospitals on Monday, October 30. All scientific sessions will be held at the Cleveland Public Auditorium 9:00 a.m. to 5:00 p.m. Tuesday through Friday. A most excellent program has been arranged at which time some of the most prominent surgeons of America, and some foreign speakers, will discuss the current contemporary surgical scene.

Through the courtesy of Smith, Kline and French Laboratories, a fine colored television program of surgical procedures, originating from the St. Vincent's Charity Hospital, Cleveland will be shown daily in the auditorium from 9:00 a.m., to 1:00 p.m. Motion pictures will also be presented each day depicting many of the recent advances in surgery and surgical technique.

One of the highlights of the meeting will be the annual banquet at the Statler Hotel on Thursday evening when Dr. Frank Lahey of Boston will talk on "Some of the Recent Advances in Surgery". Dr. Elmer Henderson, President of the American Medical Association, will deliver an address on "The Importance of International Cooperation in Surgery".

Reservations may be secured by writing to the Committee on Hotels, International College of Surgeons, 511 Terminal Tower, Cleveland 13, Ohio. Preliminary programs may be obtained from the central office, 1516 Lake Shore Drive, Chicago 10.

Dr. T. Duckett Jones Named Chairman of American Council on Rheumatic Fever

Dr. T. Duckett Jones, Medical Director of the Helen Hay Whitney Foundation, New York, N.Y., has been elected as Chairman of the American Council on Rheumatic Fever of the American Heart Association. Dr. Jones is a member of the Board of Directors of both the American and New York Heart Associations, and was formerly Director of Research at the House of the Good Samaritan, Boston.

Dr. Jones is an alumnus of the University of Virginia and is a son of Dr. and Mrs. J. Bolling Jones of Petersburg.

Dr. Raymond D. Kimbrough,

For some time associate professor of Dermatology at the Medical College of Virginia, Richmond, has moved to Cleveland, Ohio, where he has accepted the position as dermatologist to The Doctors Clinic Foundation. He entered upon his new duties the middle of August.

Dr. Ira T. Hornbarger,

Hot Springs, a school trustee from his district, was re-elected chairman of the Bath County (Va.) School Board in July.

Postgraduate Course on General Medicine.

On September 21, 22, and 23, the Frank E. Bunts Institute and the Cleveland Clinic will present a continuation course for physicians on "Practical Problems in General Medicine". Dr. M. A. Blankenhorn, Professor of Medicine at University of Cincinnati, will give the evening address September 21 on "The Rickettsial Diseases". The other out-of-town guest speakers will be Dr. D. W. Pickering, who is Director of the Medical Unit, St. Mary's Hospital, London, England, and Dr. E. Braun-Menendez of Buenos Aires, Argentina, who will speak on "Pathogenic Basis of the Treatment of Hypertension".

Inquiries regarding the complete program and registration can be addressed to the Director of Education, Frank E. Bunts Educational Institute, 2020 East Ninety-third Street, Cleveland 6, Ohio.

Urology Award.

The American Urological Association offers an annual award of $1,000.00 (first prize of $500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Palmer House, Chicago, Illinois, May 21-24, 1951.

For full particulars write the Secretary, Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, New Jersey. Essays must be in his hands before February 10, 1951.

Dr. Richard B. Nicholls,

Norfolk, announces that he has moved his offices to 750 Graydon Avenue at Colley, as of August 1, where he will continue in the practice of obstetrics and gynecology.

Physicians Needed for the Various Services.

The critical need for young physicians for the

various services—Army, Navy and Air Force—is stressed. Physicians available for duty should at once write the Office of Medical Services, Department of Defense, Washington 25, D. C., stating with which service they desire to serve.

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Advertisers in our journal are carefully selected. Only those meeting our advertising standards may use the facilities of our pages. No advertisement will be accepted which, either by intent or inference, would result in misleading the reader. May we suggest that you review the ads in each issue of our journal and, when occasion arises to prescribe products featured or use the facilities offered, tell them you saw their ad in the Virginia Medical Monthly.

Dr. Edward M. Holmes,

City Health Officer of Richmond, has been named a member of the Board of Judges for the Annual Research Award given by the American Venereal Disease Association. His term of office is three years.

The Southern Trudeau Society

Will hold its annual meeting in Roanoke, Virginia, September 21-23, in conjunction with the Southern Tuberculosis Conference. The Hotel Roanoke will be headquarters for the meetings. All physicians interested in tuberculosis or pulmonary disease are invited to attend. Programs may be secured from your local tuberculosis association or the Virginia Tuberculosis Association in Richmond.

Dr. E. W. Perkins

Has returned to Richmond after attending the Sixteenth International Congress of Ophthalmology in London, England. He also attended the French Congress of Ophthalmology in Paris where he was elected to membership in the French Society of Ophthalmology.

Drs. Hoover and Bray.

Dr. Roy M. Hoover and Dr. Charles B. Bray, Jr., announce their association, with practice limited to orthopedic surgery. They are at Suite 707, Medical Arts Building, Roanoke.

State Health Department News.

The health unit in Henry County in the City of Martinsville will open September 1 with headquarters in Martinsville. Dr. Harold Kennedy will be Health Officer.

Dr. Charles M. Wylie became Health Officer of the Buchanan-Tazewell Health District on August 8. Headquarters for this unit is in Richlands.

Effective September 1, Dr. Catherine Howell will assume duties as Health Officer of the Fluvanna-Goochland-Louisa Health Department with headquarters in Palmyra.

Dr. Joseph J. Miller will become Health Officer in Pittsylvania County with headquarters in Chatham, on September 1.

For Sale.

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OBITUARIES

Dr. Roshier W. Miller,

Richmond, a former president of the Medical Society of Virginia and one of its most popular members, was injured fatally in an automobile accident just east of Petersburg on July 14, and died almost instantly. An announcement of his death appears in the editorial pages of this issue of the Monthly.

Dr. Johannes Charles Bodow,

A prominent Hopewell physician and coroner for twenty years prior to his retirement, died July 20, having been in bad health for a time. He was seventy-five years of age, a graduate of the former University College of Medicine, Richmond, in 1897, and was a life Member of the Medical Society of

Virginia. He practiced for a time in Roanoke before moving to Hopewell in 1915, where he was associated with the Hummel Ross Fiber Corporation in addition to his private practice. His sister and a nephew survive him.

Dr. Edward W. Brown,

Of Washington in Rappahannock County, died July 2, at the age of 92, after a service of nearly seventy years as a physician. He graduated in medicine from the College of Physicians and Surgeons of Baltimore in 1881 and had been a member of the Medical Society of Virginia since 1891, being a member of its Fifty Year Club. The following resolutions were sent us by his Masonic Lodge:

WHEREAS, On July 2, 1950, the Grand Master of the Universe saw fit to summons the soul of Brother E. W. Brown to rest in the Lodge Eternal and at 10:30 P. M. he quietly passed to his Heavenly rest. Not only as a tried, trusted and true Mason but as a man like Christ he devoted his entire life to the alleviation of the ills and sufferings of those people around him, at all times having the best interest of his patients first and foremost in his heart and mind. He was always ready and willing, regardless of his personal comfort, to go to the relief of someone in trouble. He was spared in this work for 70 years, and

WHEREAS, He was initiated June 13, 1889, passed July 12, 1889, and raised September 3, 1889. He served as Master of Washington Lodge A. F. and A. M. No. 78 from 1894 to 1905. He served as Secretary for 40 years and was rarely absent from his desk in the Southeast and then only on account of illness in his family or that of someone else. He filled this position until he became so incapacitated that he could not attend Lodge even with help. Truly a great Mason, a man who loved his Lodge and his Brothers, a splendid physician, a man very temperate in his habits, a devout Baptist and a true Virginia gentleman has passed. What more could be said of any man.

THEREFORE, We the committee appointed at the last stated communication express to the Lodge and each member thereof our deepest regrets at the passing of Brother Brown and to the widow we express our deepest sympathy both on our part and the part of the entire Lodge. It is the desire of this committee that a copy of these resolutions be filed with the minutes of the Lodge, a copy sent to his widow, a copy to the Grand Lodge and copies to the several newspapers.

Respectfully submitted,
Committee:
E. G. HACKLEY, S. W.
R. H. RAWZIE, J. W.
J. R. BOLDRIDGE, P. M.

Dr. Charles A. Easley,

Of Pittsylvania County, died in Danville on July 25, after a short illness. He was a native of Pearisburg and eighty years of age. After graduation from the Medical College of Virginia in 1893, he practiced for a time in West Virginia, later moving to Chatham. He was a Mason and a Life Member of the Medical Society of Virginia. Surviving are his wife and three children, two of whom are physicians.

Dr. John Randolph Chitwood,

Of St. Charles, for many years a physician connected with mines in southwestern Virginia, died June 7. He was fifty-one years of age and a graduate of the Medical College of Virginia in the class of 1924. He had been a member of the Medical Society of Virginia since shortly thereafter.

Dr. Wortley F. Rudd,

Dean emeritus of the School of Pharmacy of the Medical College of Virginia, Richmond, died July 26th. Coming to the College in 1906 as a demonstrator in chemistry, he became in turn a lecturer and then professor and in 1920 dean of the School of Pharmacy, which position he held until his retirement on July 1, 1947. He was for many years an associate member of the Medical Society of Virginia.

Dr. Harry Bear,

Well known to alumni of the Medical College of Virginia, Richmond, as dean of its School of Dentistry, died July 30, after a brief illness. He had been dean of this school since July 1, 1929 and, in 1945, retired from practice to devote his full time to the College duties.

Dr. Charles Fuller Kincheloe,

Of Washington and Alexandria, died July the 12th, death being due to heart disease. He was forty-three years of age and a graduate in medicine in 1931 from the University of Virginia, where he was considered a boxing star and was also a football player. He was engaged in orthopedic surgery in Washington, but maintained membership in the Medical Society of Virginia.

Dr. Veolo Caruthers,

Colonial Beach, died July 11, after an illness of three years. He was sixty-five years of age and a graduate of the Medical College of Virginia, Richmond, in 1909. He had practiced in that section for twenty-four years until his retirement in 1947. His wife and two sons survive him.

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Council on Pharmacy and Chemistry: New and Nonofficial Remedies, 1949, Xanthine Derivatives, Philodelphia, J. B. Lippincott Company, 1949, p. 323.

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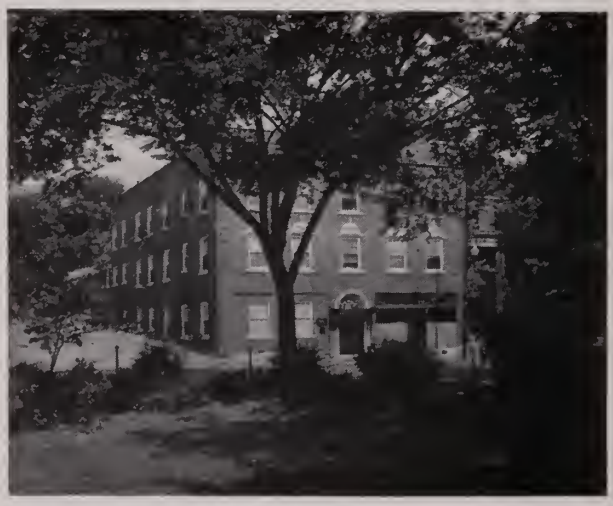

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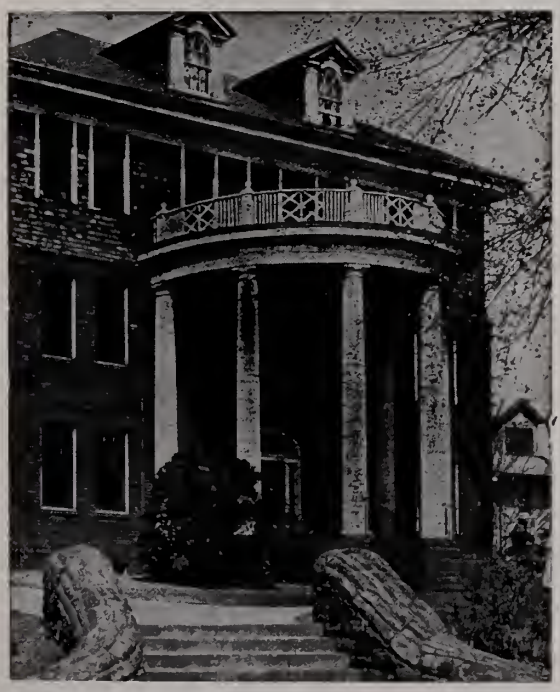

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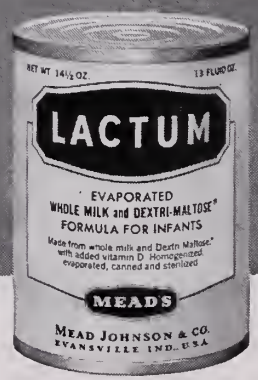

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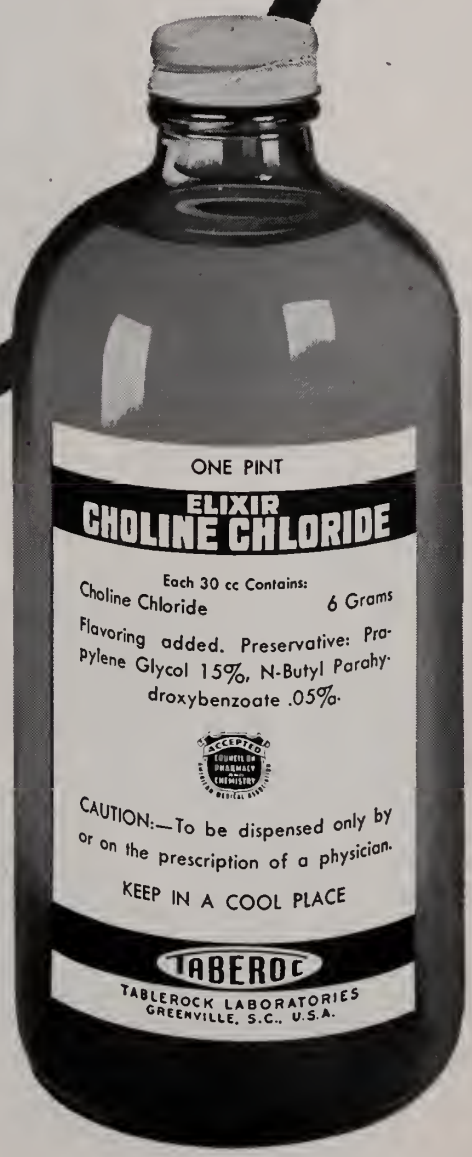

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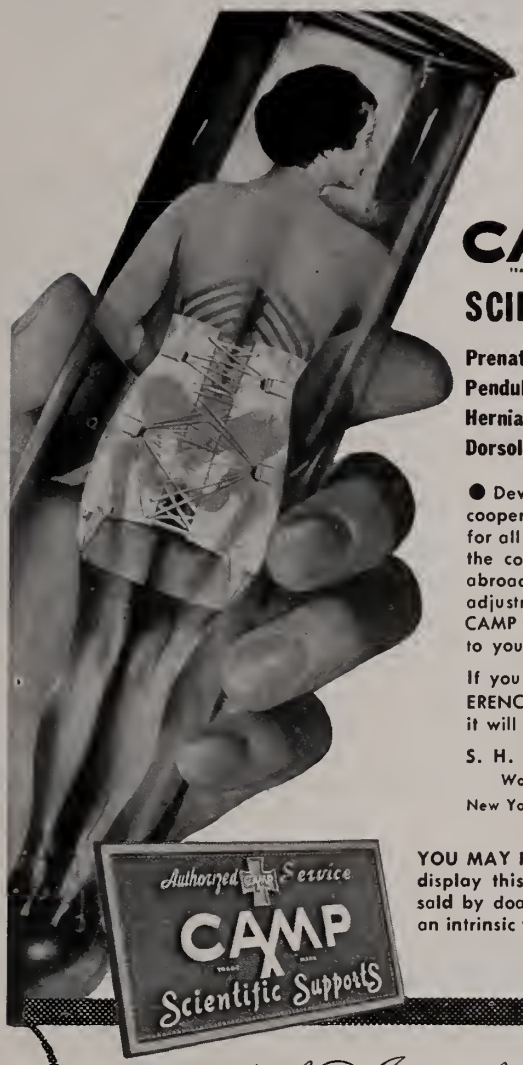

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GUEST EDITORIAL

Civilian Defense

WITH World War III apparently imminent, recent experience at London, Tokyo and especially Hiroshima and Nagasaki brings sharply to the front the absolute necessity for proper planning and coordination on the home front. Modern warfare has literally brought the battle to the door step and there is no safe place under the sun. Furthermore, the day when the conqueror can live on the vanquished in the field has passed forever and the home front must not only protect and maintain itself but must produce prodigiously if war is to be carried to a successful conclusion.

In these troublous times it behooves each of us to be thinking seriously on the matter of what he can do best to condition his community, his State and his Nation for whatever ordeal may be ahead of us. Some of us may actually be of most value right at home since upon the health and productivity of the civilian population depends the ultimate outcome of the conflict. Others of us, the younger and more vigorous, may be indispensable on the battle field, while a large middle group must be prepared not only to help maintain the home front but also to defend against disaster which the enemy may inflict upon us as an integral part of his general offensive.

The role of the physician in disaster is usually thought of as that of a kind of special agent of the Almighty, but since the Lord has not yet seen fit to release him from his mortal limitations as to time and space, it seems obvious that with the magnitude of the atomic disaster of the present day, there will never be enough of his kind to fully meet demands, hence his utmost efforts will have to be confined rigidly within his own special field. This does not imply that his voice should not be both heard and heeded in the planning councils since no one knows so well as he both his capabilities and his limitations in preserving that which is most precious to all the population, health and life.

I wonder how many of us have thought seriously about the tremendous efforts which must be made by other members of the disaster team before the doctor even sees his patient. First, the stricken area will have to be isolated by a cordon of police and home guards drawn from peripheral areas to prevent radiation injury to unwary souls anxious to render assistance.

Finally, the Geiger counter squads will enter the area from the perimeter followed by firemen, labor gangs to dig through the rubble of collapsed houses, highway gangs with bulldozers to open streets to fire equipment, wrecking cranes, ambulances and other motor transport. Public utility crews will have to restore water supplies as soon as possible for fire fighting and close off broken gas mains which might add to the general conflagration. If the disaster has come by night, which is most probable, all of these confused activities must be carried on in the glare of a burning city since power would have to be cut off to prevent further fires and electrocutions.

When the broken bodies begin to emerge from the maelstrom to the first aid stations located in schools and churches in the peripheral areas and manned by very few doctors but many laymen who have been trained in first aid, the doctor will find him-

self engaged almost entirely in supervisory functions, deciding which cases should be evacuated immediately, which must be given plasma and blood before evacuation and tragically, which are beyond help and must just be made as comfortable as possible. Save for ligation of severed vessels and application of splints and bandages, there will be little surgery at this level; and as for medicine, the antibiotics, morphine, blood and plasma will have to suffice.

If planning has been thorough, the next step in the line of evacuation will be nearby hospitals where definitive surgical treatment may be undertaken as a life-saving measure, and those 20 to 50 miles away where the less critically injured may be cared for. By prearrangement the staffs of such hospitals should have been augmented within a matter of an hour or two and before the arrival of patients. It is in this zone that the greatest saving in life should accrue.

The final step in evacuation will be chiefly to the larger population centers or to prepared evacuation areas where the convalescent, the homeless and the destitute will be cared for until rehabilitation can begin.

When one stops to consider that there are only about 1,600 hospital beds in our largest city, one might be tempted to call this disaster relief problem insoluble, but there are hundreds of doctors scattered throughout the State who have treated thousands of wounded boys successfully under primitive conditions in the bitter cold and under canvas and they have lost none of their know-how or powers of improvisation. We have also untapped sources of good will toward our neighbors and fixed determination to see this tragedy through to a successful conclusion so that our children may survive and live in peace. With such stuff battles are won.

The Society is determined to cooperate to the very fullest with Governor Battle and his Council for Civilian Defense and knows that its individual members will do likewise, each in his own sphere of activity.

JOHN P. WILLIAMS, M.D.,
Veterans Administration Hospital,
Richmond, Virginia.

EDITOR'S NOTE: Dr. Williams is chairman of the National Medical Emergency Committee of the Medical Society of Virginia.

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AUCHER-ELOY was a French pharmicist, who gave up pharmacy to become a publisher, and then in 1830, gave up his publishing business to devote himself to botanical exploration.

Caralluma belongs to the asclepias or milkweed family. There are about 40 species, found in Spain, Africa and Arabia.

THE DIFFERENTIAL DIAGNOSIS OF MEDICAL AND SURGICAL JAUNDICE*

M. Morris Pinckney, M.D., F.A.C.P.,
Richmond, Virginia.

The differential diagnosis of medical and surgical jaundice is sometimes simple, often difficult, and always hazardous. A carefully taken and minutely detailed history is undoubtedly our most effective means of arriving at the correct diagnosis. Snell[1] has well stressed the advantages that we practicing physicians have in studying a jaundiced patient by being able to see the case in its early stages. He remarks that an accurate chronologic history must pay "particular attention to three points: (1) the symptoms which either immediately or remotely preceded the onset of jaundice; (2) possible exposures to virus hepatitis and to hepatotoxic agents," especially dried blood plasma; and "(3) a detailed description of any pain which the patient may have suffered before or since jaundice made its appearance."

Examination of the patient must include notation of the color of the skin, sclerae, and buccal mucous membranes; search for spider nevi, telangiectases and distended veins; palpation of cervical and other lymph glands; palpation and percussion of the liver and right costovertebal angle for tenderness; palpation for a distended gallbladder, right upper quadrant tenderness, and ascites; and inspection for presence of peripheral edema.

We shall attempt to simplify the problem if possible by recalling the essential physiology of bile production, the clinical symptoms of jaundice, and shall submit such laboratory tests as seem proven by experience to be worthwhile and not too complicated.

The bile pigments are manufactured from the breakdown of hemo-globin and possibly other pigments by the reticulo-endothelial system of the body, especially in the marrow, spleen and liver. This conversion from hemoglobin to bilirubin-globin, effected by the reticulo-endothelial cells, supplies to the general circulation a large amount of protein-bound pigment, which is nondialyzable and which produces a delayed or indirect type of van den Bergh reaction.[2] This protein bound pigment, bilirubin-globin, does not produce an immediate color reaction with van den Bergh's diazo compound, but, following the addition of alcohol to precipitate the protein, the delayed or indirect reaction is obtained. The indirect or delayed reacting bilirubin-globin is carried in the general circulation to the liver, when passage through the liver cells of the hepatic cords transforms this pigment into sodium bili-rubinate, or bilirubin, which produces the direct or immediate type of diazo reaction.

Bilirubin passes through the bile channels of increasing size to the duodenum where bacterial action chemically reduces this substance to urobilinogen and stercobilinogen. Most of the urobilinogen is reabsorbed into the portal circulation and returned to the liver for reconversion to bilirubin.

Other constituents of bile, probably produced by the hepatic cells, are the bile salts and cholesterol esters, diminished when hepatic function is disturbed and increased in the blood when dammed back by a block in bile channels.

Clinical classifications of jaundice have been suggested by many writers, notably Rich,[3] McNee,[4] Watson[5] and more recently Ducci[6] who presents an understandable, working classification. Ducci divides jaundice into 3 types: the pre-hepatic, the hepatic, and the post-hepatic. The pre-hepatic includes hemolytic and non-hemolytic forms, the most frequently encountered being the well known congenital hemolytic jaundice. The hepatic type is subdivided into hepatocellular and hepatocanalicular forms, these being evidenced by injury or disease of the liver itself. The post-hepatic type results from complete or incomplete obstruction of the bile ducts outside of the liver.

In general the pre-hepatic and hepatic types are considered to be "medical jaundice" while the post-hepatic type is "surgical jaundice."

Thus we are seeking to distinguish between jaundice originating in one of three places, as illustrated by this simplified drawing. The pre-hepatic type is the jaundice due to pathology in the reticulo-endothelial system primarily; the hepatic type is that originating in the liver itself, and the post-hepatic type, that resulting from interference with

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

the flow of bile from the liver to the duodenum. Prompt differentation of types is obviously important for the welfare of the patient, and with this complex problem we are now concerned.

The presence of pre-hepatic, or the reticulo-endothelial type of jaundice, if it may so be called, usually offers no great diagnostic problem. Splenomegaly, recurring mild jaundice with anemia and fever,[7] associated with changes in the blood picture, increased indirect reacting type of bilirubin in the blood stream (for the liver does not participate in this disease), and acholuria indicate the diagnosis. Urinary urobilinogen may be normal or greatly increased, depending upon the load of the pigment delivered to the liver for transformation to sodium bilirubinate.

Before discussing the hepatic and post-hepatic forms of jaundice we wish to stress a few points concerning the recommended laboratory tests. Most writers agree that the van den Bergh reaction, both qualitative and quantitative, is extremely important, though the icterus index may be substituted for the latter. The Harrison "barium or filter strip" technic for the detection of bilirubin in the urine, we wish to emphasize, is apparently trustworthy and so simple as to be a bedside procedure.[8] Serial studies for urinary urobilinogen, employing Ehrlich's method, should be made on samples collected at the same time each day, such as 2 to 4 P. M., and promptly tested. The clay colored stool may be subjected to chemical analysis for bile, but it behooves us all to inspect personally the stools of the jaundiced patient. The cephalin-cholesterol flocculation test of Hanger is recommended as probably the most useful of the flocculation test to study parenchymatous disease, being of greatest diagnostic value in patients with jaundice of short duration. A prolonged prothrombin time indicates diminished formation of prothrombin due either to a lack of bile salts in the intestines preventing the absorption of fat soluble vitamin K, or to disease of the liver cells themselves preventing its manufacture. If to the jaundiced patient with hypoprothrombinemia, vitamin K is administered parentally and a dramatic reduction in prothrombin time occurs, one may consider the jaundice to be obstructive in type.

Hepatic jaundice, the chief group of medical jaundice, contains hepatocellular and hepatocanalicular types, known clinically as hepatitis and cirrhosis. The cellular and canalicular types do not appear separately and distinctly in practice as a rule but are blended together as in acute infectious hepatitis.

The clinical features of infectious hepatitis, so familiar during the war years and still appearing sporadically, include a grippe-like onset with anorexia as a prominent symptom, and few signs other than leukopenia, cervical adenopathy, and tenderness of the liver to percussion. With the onset of jaundice, enlargement of the liver is usually noted, together with tenderness in the right costo-vertebral angle.

Ordinary infectious hepatitis exhibits predominantly disturbances of function of the hepatic cells, but there are also associated evidences of varying degree of canalicular disease. Thus in the pre-icteric phase of acute infectious hepatitis, bilirubinuria may be detected by Harrison's test, and the van den Bergh reaction may show increased amounts of both immediate and delayed reacting pigment. Urobilinogen will be present in the urine in increased amounts during the period of increasing icterus, and then disappear, to return as jaundice subsides and healing progresses. Blood cholesterol and serum albumen are diminished in proportion to the extent of damage to the liver cells. The cephalin-cholesterol flocculation test of Hanger becomes positive early in the course of the disease and may remain positive or abnormal even after the disease is considered cured. The alkaline serum phosphatase may remain normal or be elevated early in acute hepatitis depending upon the degree of involvement of the canaliculi. Though most present-day writers state that no significant increase of alkaline phosphatase occurs in early infectious hepatitis, we[9] found in our series of more than 1,200 cases observed in the Italian Theatre in 1943 to 1945 that approximately three-fourths showed abnormal phosphatase values. Perhaps the virus in Italy exhibited a predeliction of the ampullae and canals. Significant prolongation of the prothrombin time, though not frequently observed, is always indicative of severe hepatitis, and may be found in fulminating cases early in the disease. We found little advantage in employing such function studies as the glucose tolerance and hippuric acid tests.

Watson[1,10] believes that the canalicular form may be seen in the chronic hepatitis with or without evi-

dent clinical jaundice. These cases, of which we will probably see more and more as a result of the great epidemic of World War II, present symptoms such as pruritus and laboratory data typical of regurgitation of obstructive jaundice. Evidence of reduced hepatocellular function is usually lacking. Watson states that "in the absence of sufficient evidence to indicate intra-hepatic biliary obstruction, it is believed that the continued regurgitation of bile supports the concept of increased permeability of the cholangeoles. This regurgitation is manifested by a prompt direct hyperbilirubinemia, hypercholesterolemia, and hyperphosphatemia." He further believes that this pathology should be considered a transition from hepatitis to cirrhosis of the chalangeolitic type. Biopsy of the liver tissue is of great help in a study of this most perplexing jaundice.

Whereas hepatic jaundice, therefore, connotes disturbance of liver cell function, post-hepatic jaundice indicates partial or complete interference with the drainage of bile from the liver to the intestines.

Calculous disease of the gallbladder and ducts is usually associated with a long history of dyspepsia, intolerance to fats, upper abdominal colic and frequently transient jaundice. In an acute attack, colicky pain is marked, chills and fever usually present, nausea and vomiting protracted, jaundice varying in intensity from day to day, tenderness and spasm present in the right upper quadrant, occasionally the gallbladder distended, and leukocytosis present.

We must bear in mind also the possibility of pancreatic disease and carcinoma of any abdominal viscus. Carcinoma of the head of the pancreas, though usually described as producing a painless, progressive jaundice in a patient over forty years of age, may produce recurring attacks of right upper quadrant pain or generalized abdominal pain, usually associated with weight-loss and diarrhea.

The differential diagnosis of jaundice may sometimes be clarified by X-ray studies, particularly the use of flat plates of the abdomen to identify stones in the duct, or the passage of barium through a widened duodenal arch to suggest carcinoma of the head of the pancreas. The duodenal tube is particularly recommended by clinicians to detect the presence or absence of bile in the duodenum, as well as to detect the presence of blood, so suggestive of malignant disease of the biliary tract.

If the blockage is complete and no bile reaches the intestines, there will be, of course, no bile in the stools, and a damming back into the general circulation of all normal constituents of the bile. Thus, our tests demonstrate jaundice due to accumulation of prompt reacting bilirubin and increased values for cholesterol and serum phosphatase. If the prothrombin time is prolonged, administration of vitamin K should effect a reduction. Bile overflows into the kidneys, and the urine exhibits a positive Harrison test.

Since most cases of obstructive jaundice are incomplete and caused by a ball-valve action of a stone in the bile duct, significant fluctuations in serum bilirubin will appear, the cholesterol and phosphatase roughly paralleling the sodum bilirubinate.

To summarize this complex problem, we note that the surgical jaundice patient frequently presents a history of long standing dyspepsia, previous attacks of colic sometimes associated with slight jaundice, chills and fever of considerable degree, a fluctuating degree of icterus of a greenish hue, pruritus in long standing cases, right upper quadrant abdominal pain and tenderness with spasm, and rarely a palpable gallbladder.

The medical jaundice case, on the other hand, except in cirrhosis, gives no history of antecedent colic or dyspepsia, may recall exposure to epidemic hepatitis or may have received blood plasma intravenously, complains primarily of anorexia and lassitude usually preceding by several days or a week the onset of jaundice, exhibits an orange hue to his skin, frequently enlarged glands in the neck, definite tenderness over the liver and costovertebral angle, and most frequently a liver enlarged and tender two to four finger breadths below the costal margin.

A composite picture of the laboratory tests differentiating medical and surgical jaundice, excluding pre-hepatic jaundice, reveals an increased prompt van den Burgh reaction in both instances, but with a delayed reaction in medical jaundice also; bile in the urine in both conditions, but urobilinogen present in medical jaundice; cholesterol, phosphastase and prothrombin time are increased in surgical jaundice while often diminished in medical jaundice. Serum albumen is often decreased in medical jaundice but not affected in surgical jaundice. And in

complete post-hepatic obstruction the stools are acholic.

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Medical Arts Building.

DISCUSSION

DR. JAMES OTEY BURKE, Richmond: Dr. Pinckney has discussed the differential features of medical and surgical jaundice most completely in the time allotted him. I am in accord with everything he has said and shall only expand upon some of these features.

It should be stressed that the value of any test is increased by repeating it at a later stage of the disease. We may have a better chance of making a correct diagnosis of a type of jaundice with two sets of several familiar liver function tests done at an interval of one or two weeks, than with one set of many elaborate tests.

Slide 1: This slide shows the changing values of cholesterol esters in a case of infectious hepatitis with gradual return of the cholesterol esters to normal. It is to be noted that the total cholesterol remains approximately the same and that the cholesterol esters increase in absolute value, thereby giving an increased percentage of cholesterol esters with improvement in liver function.

Slide 2: This slide reveals the changing value of cholesterol and cholesterol esters in a case of extra-hepatic biliary obstruction as the jaundice deepens or as the obstruction continues. It is to be noted that the absolute value of cholesterol esters remains the same but with the increase in the absolute value of the total cholesterol, the percentage of cholesterol esters diminishes. This reveals the importance of knowing the absolute value of the total cholesterol and the cholesterol esters and the value of repeating tests during the course of the disease.

The duration and degree of jaundice are often helpful. A slowly progressive degree of icterus suggests surgical jaundice as does continued absence of bile in the stool, as well as diminished or absent urobilinogen. Dr. Pinckney has mentioned pain as an important differential symptom, one which we so frequently do not stress.

Slide 3: This slide reveals the values for urinary urobilinogen in various types of jaundice. It is taken from the paper of Dr. Cecil Watson, as noted. One comment on urobilinogen—it is important that twenty-four-hour samples be studied if we are interested in diminished values or particularly in absent readings. Watson has pointed out that neoplastic jaundice will usually leave consistently low values, below 0.5 mgm. %/24 hours. Another thing about urobilinogen studies is that they should be done on several days as hepatitis may yield low values the first few days.

I would also add that any test of parenchymal liver cell damage is likely to be of no value for differentiation if done late, since jaundice due to stone or cancer will eventually lead to liver cell damage by virtue of regurgitation. Thus the Hanger cephalin cholesterol flocculation test which depends upon an alteration in albumin: gamma globular ratio—or the thymol turbidity test which depends upon an alteration in the serum lipid-gamma globulin ratio, may be positive late in regurgitation jaundice.

The most difficult jaundice to clearly differentiate, as Dr. Pinckney pointed out, is the cholangiolar (or cholangiolitic) type. This type is usually chronic and manifested by a large liver, deep icterus and intermittently acholic stools. 1+ may produce the typical so-called Hanot's cirrhosis (jaundice and splenomegoly without ascites). Laboratory tests may reveal only three abnormalities: greatly increased bilirubinemia, cholesterolemia and phosphatasemia. Liver punch biopsy is most frequently necessary to make this diagnosis and we often have these patients surgically explored before a diagnosis is established.

Slide 4: Elevation of serum alkaline phosphatase has usually been associated with extra-hepatic obstruction. This slide depicts the serum alkaline phosphatase and serum bilirubin in a case of severe hepatitis of the cholangiolic variety. It is to be noted that there is an inverse relationship between the serum alkaline phosphatase elevation and the serum bilirubin elevation. This is contrary to the usual conception that serum alkaline phosphatase is elevated with an elevation of serum bilirubin. We think it is evidence that serum alkaline phosphatase elevation does not mean obstruction. We have other evidence on this.

Slide 5: The remarkable thing about this slide is the marked cholangiolar proliferation. Same case as Slide 4.

I would like to express my appreciation to Dr. Pinckney for allowing me to discuss his excellent paper.

DR. CHARLES M. CARAVATI, Richmond: The important thing in the interpretation of jaundice is to decide whether the patient should be treated medically or surgically; and Dr. Pinckney has very well outlined for us the course of procedure to be followed in making that decision. There are, however, two simple factors that may be emphasized. Number one is the daily gross inspection of the stool of the patient to determine whether it is clay-colored or has normal color. Regardless of the presence or absence of urobilinogen in the stools or urine, if the stools are normal in color and continue normal in color

there is seldom need to call a surgeon. There is very little good the surgeon can do a patient who has adequate pigment in the stools, with the possible exception of a hemolytic syndrome due to hypersplenism.

The second point is the leukocyte count. The white count as a rule is increased in any type of surgical jaundice. That is not invariable; but, with the exception of Weil's disease, hepatic amebiasis, and the hemolytic crises, there is practically no medical jaundice in which the leukocyte count is raised.

Liver biopsy, to differentiate acute hepatitis from acute obstructive jaundice, is not too helpful. In both conditions, there is histo-pathologic evidence of stasis in the bile channels and inflammatory reaction, and the findings are not sufficiently specific to differentiate the two conditions in certain stages of the disorders.

Find Chloramphenicol Useful Against Bacillary Dysentery.

Good results in treating 35 patients for bacillary dysentery with chloramphenicol (chloromycetin, trade name) are reported by a research group from Washington, D. C.

"Diarrhea usually subsided within three days, and an uneventful recovery ensued in all 35 patients," according to Drs. Sidney Ross, Frederic G. Burke, E. Clarence Rice and John A. Washington, and Sara Stevens, B.S., all of the Research Foundation, Children's Hospital. (*J. A. M. A.*, August 26.)

Although sulfadiazine also is effective against the disease, its usefulness is limited, they point out. Causative microbes frequently become resistant to sulfa drugs, occasional patients are sensitive to sulfa compounds, and adminstering sulfadiazine to dehydrated patients in the tropical areas where the disease is most prevalent may be hazardous.

"Red Feather Month" in Virginia.

Governor Battle has designated October as "Red Feather Month" in Virginia and has called on the people to give generously to their Community Chest campaigns throughout the State.

The Red Feather, official symbol of Community Chest services, stands for united, voluntary action by citizens in working and giving to build better communities. It means united planning and fund raising for the voluntary social services of health and welfare.

The biggest of the Community Chest drives in the State will be the one for the Richmond area. An army of some 5,000 volunteer workers will take part in this campaign. They will raise money for 31 Red Feather Agencies serving the people of Richmond, Henrico County and the northern half of Chesterfield County.

Twenty-five Community Chests in the State will conduct their drives in October. They are Alexandria, Arlington, Bristol, Charlottesville and Albemarle County, Covington and Alleghany County, Danville, Fairfax County, Fredericksburg, Elizabeth City County, Hopewell, Lynchburg, Marion, Martinsville, Newport News and Warwick County, Norfolk, Petersburg, Portsmouth, Radford, Richmond, Roanoke, Staunton and Augusta County, Suffolk, Virginia Beach and Princess Anne, Winchester and Frederick County, and York County.

ANTIBIOTICS AND CHEMOTHERAPY IN SURGICAL DISEASE*

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The years succeeding Domagk's historic experience with prontosil[1] in 1935 have seen feverish and fruitful activity in antibiotic and chemotherapeutic research. In rapid succession new drugs have been discovered which have added to the effectiveness of our attack on disease caused by micro-organisms. These years have also witnessed a marked decline in surgical mortality. The many factors responsible for this accomplishment have been considered in detail by Lehman and Becker.[2] The role of antibacterial agents in this mortality reduction has been obvious and as a result there has developed justified enthusiasm concerning the value of these substances in the management of surgical disease. Unfortunately, in some instances, this enthusiasm has led to injudicious employment of these useful agents. They have become regarded by some as magic drugs and examples indicating disregard for the fundamentals underlying their use have been observed. For this reason a reconsideration of the basic principles governing the use of antibiotic and chemotherapeutic agents together with a summary of the present position of specific drugs in surgical disease appears to be timely.

PRINCIPLES OF CHEMOTHERAPY IN SURGERY

Chemotherapeutic and antibiotic agents have two functions in the management of the surgical patient. One is a prophylactic function, the other, a therapeutic function.

Prophylactic Function. From the prophylactic standpoint these drugs are used to prevent or to minimize infection in contaminated operative fields. The first such employment dates from the experience of Jensen, Johnsrud and Nelson[3] who applied sulfanilamide directly to the wounds of compound fractures with the idea of preventing infection. Present-day application of the prophylactic principle covers the use of these agents, (1) in contaminated accidental wounds of soft parts and bones, (2) as intestinal antiseptics, and, (3) to prevent or to minimize spread of infection when operations are conducted in or adjacent to tissues already the site of established infection.

Prior to the entry of our country in World War II the National Research Council instituted, in nine hospitals in different parts of the country, a study of the sulfonamides as preventatives against wound infection in civilian accidental wounds. Over 2,000 wounds were studied and as a result it was concluded[4] that the use of sulfonamides, either systemically or locally or combined, does not materially delay the onset or reduce the incidence or the severity of local infections in wounds, nor eliminate pathogenic organisms from them. This study indicated, however, that the use of sulfonamides minimizes the spread of the localized infection into the general circulation and thereby reduces the incidence of septicemia and death. Moreover, the carefully analyzed figures from this study showed that when the local conditions favor infection, the control cases, in which no drug was given, on the whole did better than the drug treated cases. Military experience[5,6] confirmed these observations concerning the sulfonamides and added information which included penicillin. Neither of these drugs can prevent the growth of bacteria in blood clot, serum, and devitalized tissue, nor do they prevent the absorption of toxins produced by bacteria growing in such media. Local chemotherapy cannot sterilize an incompletely debrided wound. The primary prophylactic usefulness of sulfonamides and penicillin is to protect living tissues from invasive infection.[5] The introduction of the newer agents in no way alters this principle.

The development of a drug which can be taken orally without being absorbed by the alimentary canal and which is effective against the micro-organisms normally inhabiting this region led to the adoption of intestinal antisepsis in the preparation of patients for operations on the gastro-intestinal tract. This principle is directed at the prevention of peritonitis as a complication following such operations. The first drug used for this purpose was sulfaguanidine (sulfanilylguanidine),[7,8,9] but its par-

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tial absorption and potential toxicity led to the employment of sulfasuxidine (succinylsulfathiazole),[10,11] sulfathalidine (phthalylsulfathiazole),[11,12] and streptomycin.[13] Two other agents effective against its bacterial flora but not absorbed by the gastro-intestinal tract, namely, bacitracin and polymyxin, are as yet incompletely evaluated as intestinal antiseptics. Lockwood[14] recently pointed out the conflicting nature of the reports dealing with streptomycin as an intestinal antiseptic and has reported a study conducted in his own laboratory in which the results with this drug were inconsistent. Moreover, the probable development of resistance to streptomycin by the intestinal organisms would be likely to render the parenteral use of the drug ineffective should the patient develop postoperative complications which might ordinarily be treated with this drug. Lockwood feels that it would be wiser to reserve the use of streptomycin for the treatment of complications should they develop rather than to expend the drug effect in the preoperative preparation of the patient.

It has been stated[5,15] that a cleanly incised wound needs no chemotherapy. Our own experience[16] with early and adequately debrided war wounds substantiates this concept. Nor is chemotherapy required for the clean uncontaminated operative wound. On the other hand, a patient with a contaminated operative wound or one who has been operated upon for serious infection has a better chance of escaping or minimizing spread of infection if chemotherapy is administered in adequate dosage prophylactically than if it is not.[17] An outstanding example of the application of this principle is contained in the controlled study by White and his coworkers[18] in which the prophylactic use of penicillin in pulmonary resection was responsible for a significant decrease in postoperative infective complications.

Therapeutic Function. From the standpoint of therapy of established infections, Lockwood[19] has pointed out that certain characteristics of a clinical lesion must be present if successful results are to be expected. First, the infecting organism must be sensitive to the drug used. This implies that identification of the organism by culture must be made at the earliest possible time. In rapidly developing infections of great virulence such as lymphangitis or cellulitis from which recovery of the organism is not immediately possible, it is permissible to employ drugs of low toxicity which are known to be effective against the organisms most commonly associated with these infections.

Second, for systemic use the blood supply to the area of infection must be adequate to permit transport of the drug in effective concentration. This is usually the case in acute surgical infections, but is not apt to be the case in chronic infections where the infected area may be relatively isolated from the blood and lymph stream by the previous development of dense avascular connective tissue underlying the pyogenic membrane. Although an isolated lesion will not be responsive to systemically administered chemotherapy it may yield to local application of the agent.

Third, there must be no substance which neutralizes the drug in the area where its effect is desired. With the sulfonamides, for instance, the products of tissue necrosis prevent action by competing with the drug for the metabolic needs of the bacteria. This means that the sulfonamides are not effective where there is suppuration and tissue death. Similarly, the effectiveness of penicillin may be inhibited by the presence of a specific enzyme, penicillinase, developed in the lesion by organisms such as the colon bacillus.

Fourth, the usual defense reactions of the host to infection, such as phagocytosis, must be active. Most of these drugs inhibit rather than destroy bacteria; the final disappearance of the infection depends on the local defenses of the body.

Although it is true that a considerable number of surgical infections will disappear rapidly when properly treated with antibiotics or chemotherapy, the fundamental long established principles of treatment must not be neglected. These include rest and adequate nutritional and fluid maintenance in all cases, heat in many, and surgical decompression or drainage in properly chosen ones. Selection of the latter is perhaps the most difficult problem in the use of these drugs in surgery; and the results of neglecting surgical indications are seen frequently in cases in which surgical intervention at the right time might well have saved important structures.

The general principle of surgical drainage when localization and abscess have occurred is undisputed. The removal of small collections of pus by means of needle aspiration and the instillation of an appropriate drug is an acceptable modification of this well founded principle.

Conversely, non-operative treatment before local-

ization has occurred is equally sound provided the tissues which are at the site of bacterial activity are intact, well vascularized and unthreatened by pressure. Cellulitis, lymphangitis, lymphadenitis, and infection of serous cavities in their early stages usually meet these requirements.

There is another group of unlocalized infections characterized by the building up of pressure within a closed space. Although early in the process the vascular supply is intact, rapidly developing pressure may both (1) limit the local resistance and prevent the access of drug to the area by diminishing the blood flow and (2) cause necrosis of tissue. Infections of the tendon sheaths, fascial spaces, hollow viscera and bone marrow are examples of such lesions. In these conditions prompt surgical intervention supplemented by the appropriate drug is obligatory. The operative procedure should consist of decompression where vital structures are concerned and extirpation of the lesion when the diseased organ (e.g., the vermiform appendix) can be spared.

In this connection, it must be stated that in the case of acute osteomyelitis all observers are not in accord with the program of early operation. Although the results of non-operative management of this infection are sometimes striking, it is not always possible to predict accurately the course as regards bone loss and as a result necrosis of large segments of bone may occur while waiting, possibly with futility, for the drug to be effective. In judging this matter one must understand what the aim and method of surgical intervention is. Its aim is single and clear—decompression of an area which is being asphyxiated by unreleased pressure, so that an effective local circulation can supplement the action of any drug employed. In no sense is it to be considered as "drainage". Logically, therefore, the surgical method chosen provides for decompression alone, although in most instances a drain must be employed so that the escape of exudate may be provided and further pressure avoided. The closed space must be opened only and drains must go no deeper than the opening. It is essential in these operations to protect the infected area from any manipulation. The process within the space is in the stage of cellulitis and it is as dangerous and illogical to incise the content or to thrust an exploring instrument into it as it would be to incise a subcutaneous cellulitis.

Finally, there is a group of infections, late ones, in which communication between blood and lymph channels and the site of bacterial activity is interfered with by the interposition of a dense avascular barrier. As a result contact of drug with bacteria cannot be effected. Cavities, sinuses and fistulae with fibrotic walls and ulcers with scarred bases are typical examples of such lesions. Recovery will depend upon operative intervention the aim of which is the re-establishment of vascular contact.

The treatment of surgical infection demands the proper use of all logical methods. Certainly the chemotherapeutic and antibiotic agents are adjuvants of enormous value; but they must be considered as only a part of the therapeutic team. They must never be omitted in serious infection; but they must not be the sole reliance of the physician.

SPECIFIC ANTIBACTERIAL AGENTS

The remaining portion of this paper will be devoted to brief comments concerning several specific antibacterial agents with particular regard to their present position in the management of surgical disease.

Sulfonamides. Domagk's[1] experimental results with prontosil were put to clinical trial by Colebrook and Kenny[20] and others. The effective component of prontosil was identified as sulfanilamide, a chemical which had been known for many years. There followed an extended use of this drug as well as the development of many different derivatives. The sulfonamides have a wide range of activity against both gram-positive and gram-negative bacteria. Many of these organisms are responsible for surgical infections and the usefulness of this group of drugs in surgery became established very early.

Unfortunately the sulfonamides are inactivated in clinical lesions in the presence of the products of tissue breakdown. This has limited their effectiveness in surgical infections which are so frequently characterized by the presence of pus, necrotic material, and devitalized tissue. Moreover, an additional limitation to sulfonamide therapy is its toxicity. Both of these limitations have been effectively met by other drugs and many of the early uses of the sulfonamides in surgery are now accomplished by less toxic and more effective agents. At present the sulfonamides are of value as intestinal antiseptics, in bacillary urinary tract infections, and in conjunction with other agents in the treatment and prevention of peritonitis of fecal origin.

Penicillin. Many of the limitations of the sul-

fonamides were met by the introduction of penicillin. This antibiotic was discovered in 1929 by Fleming[21] who predicted that it might be used clinically. This was finally accomplished by Florey, Chain and their co-workers[22] who demonstrated its clinical effectiveness. The chief virtues of penicillin are its almost complete lack of toxicity and its wide range of bacterial inhibition, which is unaffected by the products of tissue breakdown. It is now the agent of choice in the management of surgical disease due to staphylococci, streptococci and pneumococci. Certain of the actinomycetes are penicillin sensitive and infections due to them respond dramatically. Penicillin is effective *in vitro* against the clostridia of gas gangrene and experimental infection in animals can be prevented. Although individual experiences with gas gangrene in World War II varied, the consensus is that it is an effective agent, if not in preventing this dreadful infection, certainly in reducing its morbidity and mortality. In addition to infections caused by the organisms already mentioned other surgical infections due to penicillin sensitive organisms in many instances are favorably affected. This is particularly true, for example, in pleuropulmonary infections of surgical nature, both from the therapeutic as well as the prophylactic standpoint.

The outstanding limitation of penicillin is its inactivation by an enzyme called penicillinase[23] which is produced by certain gram-negative organisms; therefore, the range of usefulness of penicillin particularly in mixed infections is somewhat narrowed. The recent introduction of long acting forms of penicillin has greatly enhanced the ease with which the drug is administered and has improved considerably its clinical application.

Streptomycin. In 1943, Waksman and his colleagues[24] discovered an actinomycete, streptomyces griseus, that produced a relatively non-toxic antibiotic, which they named streptomycin. It is extremely active *in vitro* against gram-negative and gram-positive bacteria. From the standpoint of the surgeon the introduction of a new antibiotic which includes in its antibacterial spectrum organisms usually indifferent to the action of the sulfonamides and penicillin was most welcome. This was particularly true as regards the susceptibility of gram-negative bacilli and non-hemolytic streptococci to streptomycin.

One of the principal applications of streptomycin in surgical disease is its use together with other antibacterial agents in peritonitis of fecal origin.[25-29] It is also effective in other infections caused by streptomycin sensitive organisms such as bacillary urinary tract infection,[30] soft tissue infection,[31] and septicemia.[32] Infection with bacterium tularense which in some instances has surgical implications is responsive to streptomycin therapy.

When administered orally streptomycin is neither absorbed nor destroyed in the gastrointestinal tract. This fact gave hope that it would prove useful as an intestinal antiseptic and, indeed, reports[26,27,33] concerning its effectiveness in this role have appeared. A recent study by Lockwood[14] casts some doubt on the value of streptomycin in this connection, and on the basis of his report it would appear that the sulfonamides continue to be the drugs of choice in preoperative preparation of the intestinal tract for surgery.

Extremely heartening reports concerning the use of streptomycin in tuberculosis have appeared. The work which has been done principally in Veterans Administration Hospitals is summarized in a recent report.[34] From the surgical standpoint the consensus is that streptomycin is of value in treating tuberculous lymphandenitis and tuberculous peritonitis. Bone and joint lesions, genitourinary infections, and cutaneous sinuses and fistulae due to the Mycobacterium tuberculosis respond favorably when streptomycin is combined with the appropriate operative therapy. It is helpful in the painful and crippling tuberculous involvement of the larynx and is also employed prophylactically to prevent or to minimize the spread of tuberculosis following pulmonary resections for pulmonary tuberculosis.[35]

The collaborators in this study agreed that the routine use of streptomycin following thoracoplasty for pulmonary tuberculosis is not justified. It is preferable to withhold streptomycin and give it only if extension of the disease develops postoperatively. The line of reasoning in this connection is based upon the ease with which Mycobacterium tuberculosis develops resistance to streptomycin. One must be reluctant to use it in any condition which could be expected to respond favorably without its use, lest one be faced with a life-theatening episode in the future and be unable to employ it with any likelihood of success. The same rationale is advanced by Lockwood[14] in connection with the use of streptomycin as an intestinal antiseptic.

One of the great disadvantages to streptomycin

therapy has been the toxicity of this drug.[36] Untoward reactions are not uncommon and their incidence becomes more frequent with increasing dosage.[37] They consist of histamine-like reactions such as headache and flushing of the skin, neurologic disturbances such as vertigo, tinnitus, deafness and paresthesias and hypersensitive reactions such as fever, skin eruptions, and eosinophilia. By far the most significant changes are the eighth nerve disturbances which take the form of tinnitus, vertigo, and deafness, and which may be permanent.

Streptomycin, however, possesses a serious limitation. Strains of organisms initially sensitive to this drug readily develop resistance both *in vitro* and *in vivo* and for this reason it is important to give an adequate dose initially lest the infection becomes drug-resistant before it is eradicated. Another limitation of streptomycin is its reduced effectiveness in the presence of necrotic tissue.[31]

Bacitracin. In May, 1943, while studying the bacterial flora of badly contaminated civilian accidental wounds, Johnson, Anker, and Meleney[38] discovered an organism which produced a powerful antibiotic agent. The organism belongs to the Bacillus subtilis group; the antibiotic is called bacitracin. It possesses activity against gram-positive organisms such as streptococci, pneumococci, staphylococci, micrococci, corynebacteria and clostridia and against two species of gram-negative organisms, gonococci and meningococci. It is ineffective against other gram-negative organisms such as members of the coliform, proteus and pyocyaneus groups. Actinomycetes and spirochetes are susceptible, but fungi are resistant. Laboratory experiments are reported[39] in which bacitracin has been employed with effectiveness as a prophylactic against the development of gas gangrene in the guinea pig.

In general it may be said that organisms sensitive to penicillin are sensitive to bacitracin. However, certain individual strains are penicillin-resistant, but bacitracin-sensitive and vice versa. Some strains initially sensitive to bacitracin subsequently develop resistance, but this tendency is not pronounced. Only one organism has been found which enzymatically inactivates bacitracin.[40] Unlike penicillin, bacitracin is capable of antibacterial activity in the presence of gram-negative organisms. It is not inactivated by the products of tissue breakdown nor destroyed by plasma or blood. There is practically no absorption from the gastrointestinal tract, and hence, if systemic administration is decided upon, it must be parenteral.

Unfortunately bacitracin is moderately nephrotoxic. Patients frequently show albuminuria and evidences of reduced renal function during the course of drug administration.[41] The kidneys of animals given large doses show edema, cellular infiltration, and tubular damage.[42,43] It is as yet impossible to say whether the nephrotoxicity is a quality inherent in the antibiotic or whether it is due to impurity concerned with commercial production. There is évidence which suggests the latter. Despite these manifestations of toxicity, bacitracin in clinically effective amounts has been given for several weeks to a large number of patients without any evidence of permanent renal damage.

The drug has been used systemically in a wide variety of surgical infections with a high percentage of good and excellent results.[41,44] The order of effectiveness is essentially that obtained in comparable infections with penicillin. The type of cases treated have included cellulitis, infected accidental wounds, deep abscesses, osteomyelitis, carbuncles, staphylococcal meningitis and septic abortion. In addition it has been used with encouraging results in the treatment of medical conditions such as human syphilis and pneumonia.

Locally bacitracin has had a wider usage. It is effective in such conditions as pyodermias,[45] ophthalmologic infections and ulcers. It has been applied topically in closed cavities such as empyema and localized abscesses with good results. Local application currently constitutes the safest usage.

The nephrotoxicity of recent commercial lots is of sufficient severity to restrict clinical systemic employment except in infections which have failed to respond to other antibacterial agents or those so severe that the hazard of infection is greater than that of kidney damage.

Polymyxin. In 1947, there appeared independently and almost simultaneously three reports[46-48] concerning the antibacterial activity of material produced by Bacillus polymyxa, a gram-positive spore-forming rod. All strains of this organism do not possess antibiotic-producing activity.[48] Evidence has been presented indicating that several antibiotic substances are produced by Bacillus polymyxa. Polymyxin has been agreed upon as the name to be used and the several currently known polymyxins are designated by letters of the alphabet[49,50] although

formerly the terms "Aerosporin" and "Bacillosporin" were used.

Polymyxin is markedly effective *in vitro* against Salmonella,[51-53] Shigella,[51-53] Klebsiella,[51-53] the Coli-Aerogenes species,[51-53] Pseudomonas,[51-53] Hemophilus influenzae[52-53] and Hemophilus pertussis.[52,53] It is moderately effective against Brucella[51] and certain strains of Staphylococci.[51] Bacillus proteus,[51,53] hemolytic Streptococci,[51] Streptococcus viridans[53] and certain strains of staphylococci[53] are refractory to polymyxin.

Weight for weight polymyxin has the same order of chemotherapeutic activity against gram-negative organisms as has penicillin against gram-positive ones.[46] Polymyxin is bactericidal rather than bacteriostatic.[48,53,54] The rapidity of its action *in vitro* suggests that it is not necessary for the bacteria to be dividing in order to be susceptible to the drug. There is no evidence that species of organisms readily develop resistance to polymyxin.[48,51] When administered orally none of the drug is detected in the blood; therefore, for effective use it must be given parenterally.

The first clinical report on the use of polymyxin was the observation of Swift[55,56] that in early pertussis the disease is aborted dramatically and in the late disease it is significantly modified.

Particularly important from the surgical standpoint is its effectiveness in Pseudomonas aeruginosa infections. Schoenbach, Bryer and Long[57] report excellent clinical and bacteriological results in three cases of infection in children due to this organism, and Pulaski and Rosenberg[51] record its elimination from the urine in urinary tract infections. The latter observers also state that topical application of 1% polymyxin in saline or in carbowax base has resulted in the elimination of Pseudomonas aeruginosa from infected granulating wounds.

Genito-urinary infections due to other gram-negative bacilli are favorably influenced by this drug.[51,56] Pulaski[51] points out that, like other antibiotics, polymyxin is relatively ineffective in cases where there are large calculi, obstruction to drainage, other foci of infection or irreversible changes as found in advanced pyelonephritis with the scarred, contracted kidney and cortical abscesses deficient in blood supply. In these cases the drug may be useful in the control of acute exacerbations or during the preoperative and postoperative periods of patients requiring operation.

Elimination of gram-negative bacilli from the intestinal tract is recorded by some observers,[56] and Pulaski *et al.*[51] state that orally administered polymyxin suppresses coliform organisms in 24 to 72 hours.

The chief limitation of the use of polymyxin rests in its toxicity. Evidences of nephrotoxicity in human beings receiving the drug have been reported by Schoenbach, Bryer and Long[57] and by Pulaski and Rosenberg.[51] The latter observers found that there was no increase in nitrogen retention or evidence of tubular damage when the dose did not exceed 2.5 milligrams per kilogram. Pulaski and his co-workers also observed a high incidence of neurotoxic phenomena associated with polymyxin administration. These consisted of paresthesias and hyperesthesias, mild dizziness and weakness. These symptoms, which were unaccompanied by objective neurologic abnormalities, began with the first dose, but disappeared within 24 hours after completing the course of treatment. Two similar examples of neurotoxicity have been observed in patients receiving polymyxin at the University of Virginia Hospital.

There is belief that the toxicity may be caused by impurities rather than due to the drug *per se*, since, in animal experiments, different lots do not display uniform degrees of toxicity.[51] It is hoped that purification will eliminate the risk of toxicity. If it does, a very potent agent against gram-negative bacilli will be available for general clinical use.

Chloromycetin is an antibiotic which is produced by an organism of the streptomyces group named Streptomyces venezuelae.[58] This organism was isolated independently by Burkholder[59] and by Gottlieb and his colleagues.[60] Chloromycetin has been produced in crystalline form and its structural formula is known. It is a neutral compound and is unique in that it contains both nitrogen and non-ionic chlorine.[59]

Effective doses can be given to human beings without evidence of untoward reactions.[61-67] It can be administered either parenterally or orally and is rapidly absorbed and excreted or inactivated both by man and animals.[61,68]

Chloromycetin has been found effective *in vitro* against the following organisms: Mycobacterium tuberculosis,[59,60,61,69] Staphylococcus aureus,[59-61] Streptococcus pyogenes,[59,60] Streptococcus hemolyticus,[60] Clostridium welchii,[70] Escherichia coli,[59-61] Eberthella typhosa,[60,61] Aerobacter aerogenes,[60] Alcali-

genes fecalis,[60] Salmonella schottmuelleri,[59-61] Shigella paradysenteriae (sonne),[59-61] Klebsiella pneumoniae,[59,61] Brucella abortus,[59,60] Proteus vulgaris,[60,61] Rickettsia prowazekii,[59,71] Rickettsia orientalis,[71] Rickettsia akari,[71] Rickettsia mooseri,[71] Rickettsia rickettsii (Dermacentroxenus rickettsii).[71]

It possesses considerable therapeutic activity in embryonated eggs and in mice infected with viruses of psittacosis or lymphogranuloma venereum.[72] Experiments[70] in which chloromycetin has been used as a prophylactic agent against Clostridium welchii infection in guinea pigs have yielded results which are encouraging.

In vitro studies reveal that chloromycetin is not active against certain protozoa,[61] certain yeast and filamentous fungi,[61] and Pseudomonas aeruginosa.[60] It is also ineffective in experimental avian malaria, experimental rabbit syphilis and it offers no protection against Type A influenza, St. Louis encephalitis, and fixed rabies virus infections in mice or in eggs.[61]

Favorable reports concerning the clinical use of chloromycetin in typhus fever,[63,66] scrub typhus,[62] Rocky Mountain spotted fever,[64] typhoid fever,[65] bacillary urinary infections,[67] and brucellosis[73] have been reported.

From the surgical standpoint the report of chief interest is that of Chittenden *et al.*,[67] who treated 50 cases of urinary tract infection with chloromycetin. The causative organisms were chiefly gram-negative bacilli, although there were a number of mixed infections in which gram-positive cocci were a component of the bacterial flora. When the latter group of organisms was present penicillin or sulfonamides or both were used with chloromycetin. Among the 50 cases 38% of the infections were controlled, 44% improved and 18% showed no improvement. Twenty-seven cases were treated with chloromycetin alone. In 10 the infection was controlled, in 11 improved while 6 were unimproved.

Perhaps the most striking feature of chloromycetin is its antirickettsial action; this has temporarily over-shadowed its other possible usages. However, close inspection of the antibacterial spectrum of this drug suggests that it may be of value in other conditions, among which are certain surgical infections caused by chloromycetin sensitive organisms.

Aureomycin. The antibacterial properties of a strain of streptomyces was first described by Duggar,[74] who gave the organism the name streptomyces aureofaciens because of the yellow pigment it produced. This antibiotic has been prepared in yellow crystalline form and is called aureomycin.

In vitro studies have demonstrated that aureomycin is effective against a large number of microorganisms which produce disease in man. Among these are (1) the following gram-negative organisms: Escherichia coli,[74-77] Aerobacter aerogenes,[74-77] Klebsiella pneumoniae,[74-76] Neisseria gonorrhoeae,[76] Neisseria meningitidis,[76] Eberthella typhosa,[74-75] Brucella abortus,[74] Hemophilus influenza,[75-76] Salmonella, sp.,[76] and (2) the following gram-positive organisms: Streptococcus pyogenes,[74,76] Streptococcus faecalis,[76,77] Staphylococcus aureus,[74,76] Staphyloccus albus,[76] Bacillus subtilis,[74] and Diplococcus pneumoniae.[76] Mycobacterium tuberculosis[74] is also sensitive. This drug possesses marked therapeutic activity against the viruses of the psittacosis—lymphogranuloma group and rickettsiae of the spotted fever, typhus fever, scrub typhus fever and Q fever groups in embryonated hens' eggs, mice and guinea pigs.[78] Preliminary experiments in which it has been used as a prophylactic against the development of gas gangrene in the guinea pig have yielded promising results.[70] Pseudomonas aeruginosa[74-77] and Proteus vulgaris[75-77] are aureomycin-resistant.

Aureomycin is bacteriostatic rather than bactericidal in its action.[75] It was found to be less effective *in vitro* than penicillin,[75-76] but more so than streptomycin in inhibiting gram-positive cocci and it is less effective than polymyxin[75] and about equally as effective as streptomycin against most gram-negative bacilli.[76]

Paine, Collins and Finland[76] found that while some of the bacteria studied develop resistance *in vitro* to aureomycin, most do not readily do so. Clinical observations to date seem to bear this out.[76] No evidence has been found of any aureomycin-inhibiting substance similar to penicillinase.[76]

The only untoward manifestations which have been attributed to the drug have been nausea,[77,79,80] vomiting,[79] loose bowel movements,[81] and diarrhea.[77]

Wright *et al.*[82] report 52 unselected cases of acute peritonitis, 35 of which were due to appendicitis, 16 to perforated gastric and duodenal ulcer and one to perforated sigmoid diverticulum. Aureomycin was used as the chemotherapeutic adjunct to well recognized surgical management for cases of these types. All patients except one with appendicitis were operated upon. The mortality rate for peritonitis due

to appendicitis was 5.71%; for that due to perforated ulcer, 12.5%.

Infections of the urinary tract due to aureomycin-sensitive gram-negative bacilli respond favorably to therapy with this drug[77,80,81] and are comparable to the results obtained with the use of sulfonamides or streptomycin in similar cases.[81] In some instances aureomycin has been effective after failure with sulfonamide, penicillin or streptomycin therapy.[80]

The above mentioned are the only conditions of primary surgical interest for which the use of aureomycin has been reported. However, there are numerous reports concerning the application of this drug in other clinical fields. Gonococcic urethritis,[81] pneumococcus pneumonia,[81] atypical pneumonia,[79] the ulcerative lesions of patients with proven lymphogranuloma inguinale,[83] Q fever,[84] Rocky Mountain spotted fever,[80] tularemia,[85] brucellosis,[80] typhoid fever,[80] staphylococcus skin and breast abscesses in infants,[80] lymphogranuloma venereum,[83,86] and miscellaneous ocular infections,[87] all in small numbers of cases have shown favorable response to aureomycin therapy.

These reports suggest that aureomycin may be useful in a large variety of bacterial diseases as well as infections with rickettsiae or with viruses of the psittocosis-lymphogranuloma venereum group.

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DISCUSSION

DR. EDMUND HORGAN, Winchester: Chemotherapeutic agents date back to the introduction of salvarsan in 1909 by Ehrlich; bacteriostatic substances to studies of prontosil in 1935 by Domagk; and antibiotics to the discovery of penicillin in 1929 by Fleming. With the introduction of the antibiotic substance penicillin, a new era in the treatment of surgical infections was opened to us.

One of the greatest faculties of man is vision—vision to formulate a concept. Scientists had previously observed that in the presence of contaminating molds cultured bacteria would not grow around the contaminants. Soil bacteria and molds which would inhibit or destroy pathogenic bacteria had been studied. But it was Fleming who not only observed that certain molds which contaminated his cultures prevented the growth of bacteria around them, but who conceived the idea that the product of these molds could be used to prevent infection and to destroy infectious organisms causing infectious diseases in man. With this concept fully formulated and the purification of penicillin by Florey and his associates at Oxford, investigations were carried out on animals and later on patients. Florey's problem was to purify this protective substance which the molds produced—this substance which the molds produced to protect themselves from being destroyed by bacteria. Florey and his associates succeeded in purifying it, and at a critical time, when Great Britain was at war and had many battle casualties. So confident was Sir Alexander Fleming that penicillin would kill organisms causing infection in man that he had it used in the case of a friend who was suffering from streptococcal meningitis where other forms of treatment had failed. Its intrathecal administration to this patient resulted in a cure. This was one of the early cases on which it was tried, and the first time it was given intrathecally.

With the production of penicillin by Florey and his co-workers, it became an urgent necessity to produce the substance in quantity. For this the ingenuity of the industrial engineers of the United States was challenged. They accepted the challenge, and within a few months production of penicillin was on its way.

The sulfa compounds had been studied so extensively since Domagk's experimental studies of prontosil that about the time we had penicillin we also had sulfanilamide, sulfathiazole, sulfaguanidine, and sulfasuxidine. The United States had then become engaged in World War II. In the late summer of 1943, all of these substances were available in the military hospitals of the United States. Guided by the results of clinical studies made for the National Research Council, and under the direction of able civilian consultants, antibiotic and bacteriostatic substances were used singly and in combination with striking results. Since that time other substances had been developed, and others are being searched for.

With the availability of these substances, there should be an understanding of their usefulness. Experimental laboratory studies and well supervised clinical investigations have supplied us with much useful information, and it is the careful application of this knowledge which Dr. Sandusky has stressed that we follow in the use of these valuable substances. Their use has been of inestimable value to surgical patients. But, as Dr. Sandusky has also pointed out, their use is of greatest value when other surgical principles are followed, such as the treatment of shock, the replacement of blood during surgical operations, the carrying out of nutritional and supportive therapy before and after surgical operations, meticulous hemostasis, and carefully executed surgical procedures.

Antibiotic and bacteriostatic substances have brought about new surgical conditions with which the surgeon is confronted. Among these may be mentioned re-establishment of the gastro-intestinal tract with closure of enterostomies and colostomies in cases where the patients have been saved from death from polybacterial peritonitis; decortication of the lung in cases of fibrinous pleuritis following traumatic hemothorax where infection was prevented; extensive decortication of the lung in cases of chronic empyema following suppurative pleuritis which have been treated too long by the use of these substances and where drainage has been delayed; reconstructive surgical procedures necessitated by inexcusably prolonged suppurating osteomyelitis; and, many others.

With the aid of these antibiotic and bacteriostatic substances the morbidity and mortality following contaminated wounds was much lower in World War II than in any previous war. Their use in civilian practice has been just as effectual. However, as Dr. Sandusky cautioned, let us use these substances when indicated, but do not neglect to carry out sound, well-established surgical principles in the management of contaminated wounds in surgical infections.

PSYCHIATRIC IMPLICATIONS IN GEREOLOGY*

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In any discussion of the relation of psychiatry to geriatrics it would seem pertinent to point out first the sociological significance of increasing old age, which has a distinct bearing on the psychiatric management of those elderly people who become mentally ill.

It is a well known fact that there is a gradual increase in the proportion of the population who are over the age of sixty-five. In a statement made recently by an official of the Department of Labor it was stated that in 1900 one in every twenty-five living persons was sixty-five years of age or over; now it is approximately one in thirteen. In the year 2000 it is estimated that it will increase to one in eight. That official also pointed out that the paradoxical situation had arisen in that, although the proportion of the population living past the age of sixty-five was increasing, the relative number of employed individuals was decreasing; whereas in 1890 seventy per cent of the men over sixty-five were employed, in 1940 only forty-three per cent were employed.

The sociological and economic factors involved in the increasing longevity are becoming apparent. Federal and State governments are either sincerely or for matters of political expediency, or both, accepting the financial responsibility for the care of the aged with expanding old age pensions. Industry is reluctantly, but probably more efficiently, being pushed into the role of assuming along with labor unions the responsibility of creating welfare and retirement funds, thus assuming financial responsibility for the employee past the age of normal productivity. The individual is also becoming more acutely aware of the increasing number of years that he is expected to live following his retirement age and he is therefore attempting to correlate his insurance, retirement pay, and pensions so as to afford him the maximum financial security.

What will this mean from a medical standpoint? It will mean that probably by the year 2000 one-eighth of the patients seen by the physician will be over the age of sixty-five. This patient will no longer be productive or will have only a few years of productivity left, and he will be living on a fixed income. In addition to the usual medical illnesses there will be a gradual increase in the incidence of diseases concurrent with advancing years such as cardio-vascular and renal diseases, arthritis, malignancies, and organic mental illnesses. These illnesses are normally chronic, but tend to become more so in elderly people. It means that the general practitioner along with other specialists will need to be well versed in the field of geriatrics. Geriatrics is not a special field of medicine *per se,* but is an important part of the adult specialities. Because of the fact that most of these people will be living on a fixed income, and a large number will have chronic illnesses, it becomes apparent that increasing numbers of patients will require permanent institutionalization or hospitalization. The commitment will be in numbers larger than those due merely to a larger population because of the increasing proportion of the population over sixty-five.

In addition to the occupational and economic factors, there are certain psychological influences affecting the problem of old age. The most important of these is the effect that old age has on individual security. The feeling of security is paramount in a normally well-integrated personality. In most instances the family group affords the greatest sense of individual and collective security. As old age advances the security afforded by an intact parent-child relationship changes. It changes from one in which the older individual relinquishes his independent and dominant role and assumes a secondary, more or less dependent one. The evolution of the change from independence to dependence is a normal process in the life cycle of any individual. How gracefully and successfully it is accomplished depends upon how well the individual personality is integrated. It corresponds to a similar psychological adjustment that is experienced in the adolescent and involutional periods. Normally the personality

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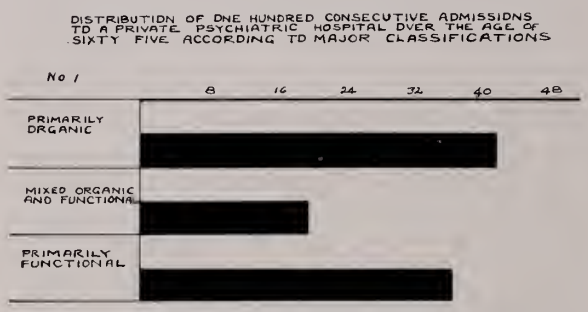
in advancing years becomes progressively inelastic. This means that the individual characteristics in modes of living, thinking, feeling and working have become relatively fixed. Forced changes are difficult to accept and adjustments are difficult to make.

The place of psychiatry in the problem of geriatrics is a rather broad one. From a preventive standpoint it can help by teaching family groups to accept the normal philosophy of the evolution of old age. It can help the more independent members of the family group to formulate plans of care which will not accentuate the growing feeling of dependency. It can advise the family in an objective way in matters of hospital care where the picture is confused by undue emotionality. Psychiatrists can treat a large number of the functional illnesses of advancing years successfully, and they can return these individuals in a relatively normal state to their original and often times improved environment. The psychiatrist must correlate his management of the patient with the sociological factors involved and keep as his purpose the formulation of a plan of treatment which will minimize the length of hospital care to a group whose illnesses tend to chronicity. He should try to protect their ability to live on a fixed income, to restore productivity where practical and to help the individual assume a happier, better adjusted mode of living.

The classification of psychiatric disorders occurring in the age group over sixty-five obviously shows a rather noticeable increase in the incidence of psychoses due to organic changes. Disabling functional illnesses are comparatively rare, except for the affective disorders. The problem of schizophrenia is rarely encountered because this is a disease of early life and the schizophrenic has long since either made a modified adjustment to his community or has been permanently institutionalized. The psychoneurotic individuals with the exception of the reactive depressive group are for the most part either fixed neurotic invalids or have learned to accept their compensating disabilities. The behavioral and emotional problems arising from the attempt of a developing personality to adjust to normal living are in the past. However, the emotional disturbances precipitated by the attempt of the inelastic adult personalities to adjust to old age are still present. Although there are certain exceptions, for practical purposes the chief psychiatric disorders arising after the age of sixty-five are mainly functional in the form of affective disturbances or those resulting from organic changes or a combination of both.

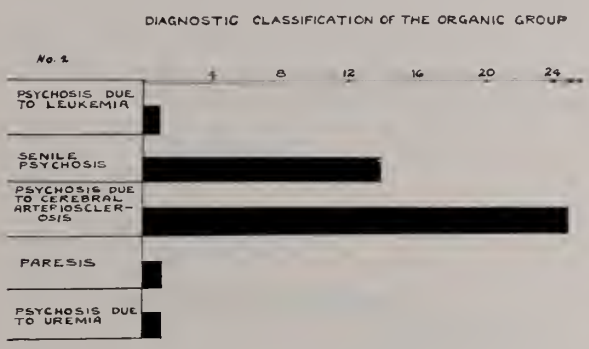
As a background for this paper, a review was made of one hundred consecutive admissions to a private psychiatric hospital of individuals over the age of sixty-five. The cases were divided (fig. 1)

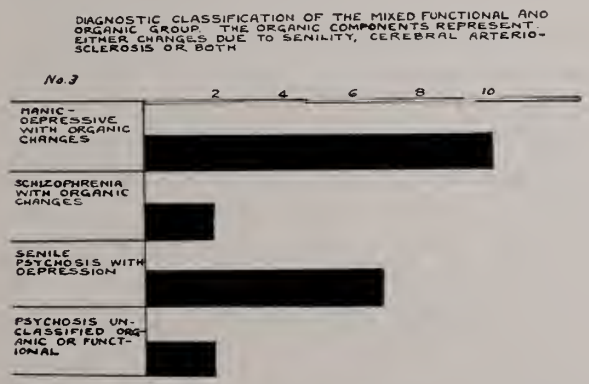


into three broad classification groups: (1) primarily organic, (2) mixed organic and functional, and (3) primarily functional. Surprisingly, fifty-eight per cent exhibited either a mixed organic-functional picture or were entirely functional. This fact is quite significant in relation to treatment. Twenty or more years ago there was a tendency to diagnose all elderly psychotic individuals as having an organic type of psychosis. From a treatment standpoint there was no real reason to make a careful differentiation. With the advent of electric shock treatment there immediately became a need for a careful delineation between organic and functional illnesses since it was found that functional illnesses, particularly of the affective group, responded well to electric shock therapy. There was at first considerable hesitancy to administer electric shock treatment to patients over the age of fifty or fifty-five or to those patients showing any degree of organic changes. During the past few years, however, with a more careful differentiation between organic and functional illnesses, and with a more aggressive, but selective use of electric shock treatment, we feel that we have something definite in the way of psychiatric therapy to offer this particular group.

Of the organic group the senile psychoses and psychosis due to cerebral arteriosclerosis (fig. 2) form the largest components. As is well known the separation between these two types of organic psychoses is often confusing and frequently both types of pathological changes are present. For the purpose of this paper the diagnoses as set forth on the

patient's chart were used; however, unquestionably in some instances there was a mixed organic picture. Paresis as a primary clinical picture is relatively rare after the age of sixty-five, particularly in the private hospital. Usually these cases are discovered much sooner, are treated, and if they remain psychotic are permanently institutionalized. The relative frequency of the functional types in the mixed organic-functional group is shown in figure 3. In the schizophrenic and manic-depressive groups it was felt that the diagnosis was primarily functional, but there was sufficient evidence of organic changes to warrant an inclusion of the prevailing organic factor. The two schizophrenics exhibited a long-standing picture of personality changes which antedated their organic changes.





The clinical differentiation between an organic and functional psychosis after the age of sixty-five is difficult. A careful history from the family will frequently disclose evidences of previous periods of elation or depression. Elderly people accept changes very poorly. Frequently they are shifted about or placed in a new home when their spouses die, creating reactive situations. Functional disturbances as a rule are more sudden and can usually be found to originate in some change in the environment. Sensorium and memory defects are, of course, quite pathognomonic of organic changes, but frequently such patients are highly over-active or mute and cannot be adequately tested. If they are accessible there are certain psychological tests which are quite helpful. The routine neurological, physical and laboratory studies will help demonstrate the presence of arteriosclerosis or other organic changes and will help to evaluate the patient as a whole. However, the mere presence of clinical arteriosclerosis will prove misleading if this is depended upon solely in establishing the criteria for treatment.

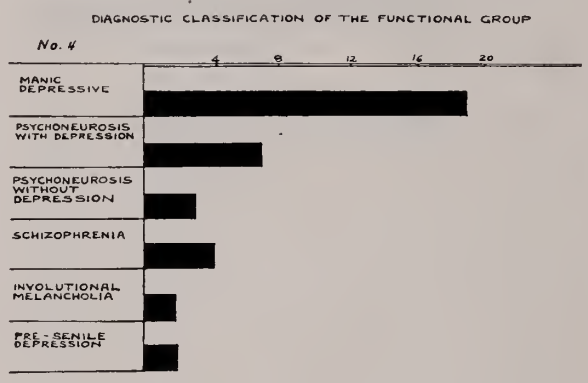
The problem of differentiating between the two groups can well be illustrated by two cases. The first case was a sixty-six year old man who four years prior to admission to our hospital was admitted for observation to another psychiatric hospital where a diagnosis was made of cerebral arteriosclerosis with anxiety state. In reviewing the patient's history it was learned that he had been forced to make a change in his working conditions, and it was felt that this precipitated his episode at that time. The patient spontaneously improved and was released from the hospital after a few days. He returned home and worked satisfactorily for the next four years. Then suddenly during the warm summer months he became agitated and depressed. At the time of admission he was quite depressed, and he was considered potentially suicidal. This period of depression, however, quickly changed to one of elation during which he exhibited a rather typical manic episode. He became violent, was a difficult management problem, and manifested physical exhaustion. Clinically he had some arteriosclerotic changes. However, in view of his history of difficulty four years previously from which he apparently recovered, of absence of sensorium defects during the interval, and of his second attack characterized initially by depression followed by a typical manic episode, it was decided that electric shock treatment would be indicated. It was felt that, although there were some beginning organic changes, the illness in itself was primarily an affectual disturbance. His response to electric shock treatment was good and he has been employed for a year after he was discharged from the hospital.

The second case was that of a woman who was first admitted to our hospital about six years ago at the age of sixty-two. Her illness at that time was

characterized by a sudden onset of right side weakness which subsided in a short time, followed by depression and hallucinations. A diagnosis of psychosis due to cerebral arteriosclerosis was made, and it was believed that she initially had had some type of cerebral accident. In reviewing the history it was noted that she had had a similar episode several years previously and that her second episode followed some domestic difficulty. It is also noted that at the time this patient was originally seen the use of electric shock treatment in elderly people was quite in its infancy. The patient remained in our hospital about one month and made no real improvement. She was removed from the hospital and taken home and subsequently re-admitted to another psychiatric hospital where electric shock treatment was administered. Following electric shock treatment, according to the family, the patient recovered entirely and remained well until recently when she again became mute and depressed. She was re-admitted to our hospital and in spite of the history and evidence of clinical arteriosclerosis it was felt that she had primarily a functional disorder. Accordingly, she was again given electric shock treatments and a remission was obtained. In retrospect, it was apparent that hers was an acute episode of a functional nature with the picture confused by history of right side weakness and generalized arteriosclerosis.

The correct evaluation of organic and functional symptoms has a great deal of influence on the family's decision as to disposition of such cases. Frequently elderly people are brought to the hospital merely "to see if anything can be done". By this they are actually meaning, is this a functional or an organic illness? The responsibility of the psychiatrist is obviously rather great. As the two cases above illustrate, it is quite easy to make a mistake in diagnosis and it might be rather embarrassing if one were to tell the family that the patient would in all probability become progressively worse and in a few months spontaneous improvement occurred. Generally, it would be better to err on the side of conservatism. A change in environment, psychotherapy in the form of reassurance, correction of dietary deficiences, and subshock doses of insulin, often produce a gradual improvement over a sufficient period of time. However, in a private hospital one is usually limited by financial considerations. Frequently these patients are either excited, violent, depressed, agitated or suicidal. Some will eventually exhaust themselves physically, others are mute and require forced feedings. If electric shock treatment can be used early in the treatment program many dangers concurrent with disturbed patients will be eliminated. Electric shock treatment in the older age group becomes increasingly hazardous; consequently, the decision the psychiatrist must make is often quite delicate and quite important.

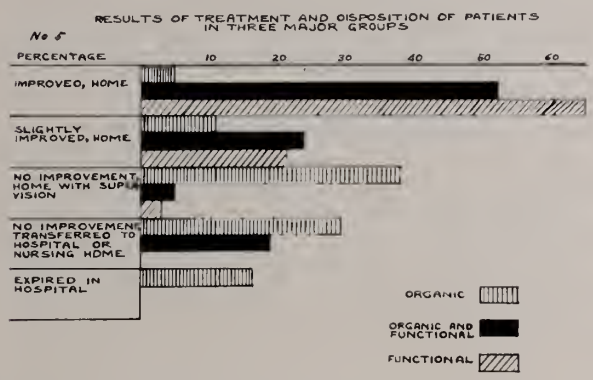
In the group presenting primarily a functional picture (fig. 4) the diagnosis is usually not too difficult.



Fortunately the largest number falls in the affective group. Among the cases studied, it was found that of a total of thirty-seven in the functional group, nineteen were diagnosed as manic-depressive, and, of the remainder, eleven had definite affectual disturbances, usually depression. These cases reviewed included some admitted in 1945 and 1946. In all probability more of the functional illnesses of this group would have been treated by electric shock treatment if admitted at the present time. The minimum age of sixty-five was chosen to eliminate the involutional psychoses; however, two in this group were diagnosed as such.

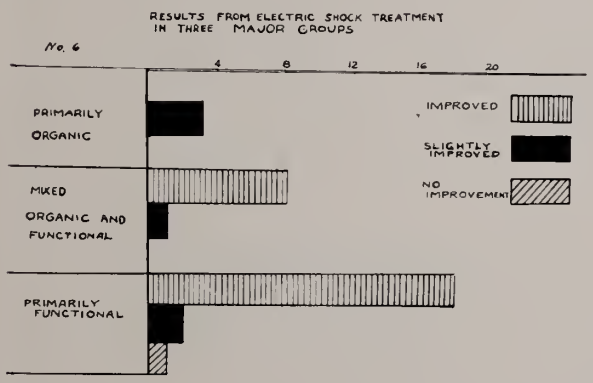
The results of the various types of treatment were evaluated as a group (fig. 5). This included those treated conservatively and by electric shock treatment. No special follow-up studies were made other than to correlate the treating psychiatrist's summary with reports of his routine follow-up studies. Patients included in the improved group were those able to return home and resume their normal status. Those classified as slightly improved were those who were well enough to be discharged, but still clinically ill. Four of the patients listed as improved required a second or more series of electric shock

treatment for a relapse of affective disturbances after a period of several months had elapsed. The fact that nearly five per cent of the primarily organic group were reported as improved may mean that the affective component of the illness was overlooked or the change of environment or reassurance played an



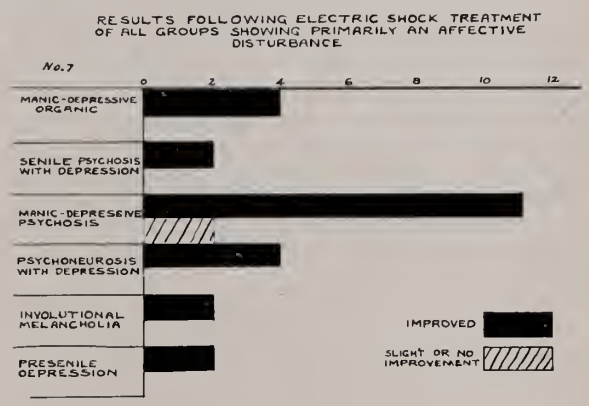
important role. The prognosis is quite clearly in favor of the functional group and decreases with the presence of true organic symptoms.

The results from electric shock treatment are shown (fig. 6.). A total of thirty-three per cent of the patients received electric shock treatment. There were no fatalities or serious complications. Twenty-six of the thirty-three patients receiving electric shock treatment were considered improved suffi-



ciently to return home and assume their normal positions. The results in those patients showing primarily an affective disorder, either alone or in conjunction with organic changes, responded about equally well to electric shock treatment (fig. 7). Twenty-five of the twenty-seven treated were listed as improved. The results in those patients having primarily an affective disorder were not a great deal different from those expected in the treatment of the affective disturbances of a younger age group. As a rule electric shock treatment was given more slowly, a fewer treatments were required, and the so-called "shock confusion" appeared sooner and lasted longer in the older patients.

The picture in relation to the progressively deteriorating organic psychoses is quite a different matter. Approximately seventeen per cent of the or-



ganic group expired within a short time after admission. Of the forty-two diagnosed as primarily organic, only two were listed as being sufficiently improved to return home and assume their normal status.

Summary

In this paper we have attempted to point out the significance of the fact that, because of increased longevity, there will be advancing sociological problems which will have to be correlated with the practice of medicine. As a method of emphasizing the importance of this problem in relation to psychiatry, one hundred consecutive admissions to a psychiatric hospital were reviewed from a diagnostic and treatment standpoint. As a result of this study it appeared that, while the problem of primarily organic psychoses remains relatively unsolved, psychiatry can be of distinct benefit to those patients showing an affective disorder with or without associated organic changes.

St. Albans Sanatorium.

Discussion

Dr. Thomas N. Spessard, Norfolk: I certainly enjoyed Dr. King's paper. He presented in a very masterful way the problems with which we have to deal in the elderly type of individual, in whom very frequently the question of whether the disease is worse than the treatment risk has to be decided. The problems in the group over sixty-five are such that thoughtful judgment is re-

quired, as well as evaluation of end results. In my experience, as in Dr. King's, so many of these patients do have mixed disorders, organic as well as functional, so we have to evaluate both the organic and the functional factors as to their importance in the disability.

The results Dr. King has gotten with the shock type of therapy are certainly very gratifying. I do not know of anyone who has gotten better results in this type of individual. I certainly enjoyed his paper very much.

DR. WALTER O. KLINGMAN, Charlottesville: I should like to ask Dr. King if aside from his shock therapy any particular emphasis was placed on the period following shock, in which these patients were stimulated to assume some type of activity or a role in the family unit or in the community, or stimulating them to other interests beyond the purely therapeutic measure of shock treatment. It has been our experience that, when this is introduced, if you can use the so-called all-out push program these individuals need a new environment, either in an institution or some domiciliary, and they will do very much better than if they are given shock treatment and returned to the same environment. Of course, in the so-called neurotic patients, who have had repeated difficulties through life, the aging process is another factor in the case. That problem is of another nature. But in our experience we have found that adjuvant treatment beyond the shock treatment is very helpful. I wonder if that was also taken into consideration in estimating the results here that Dr. King has reported.

DR. KING, closing the discussion: I would like to thank Drs. Spessard and Klingman for their discussion of this paper.

The reported patients all received the benefit of some push therapy; in addition, nursing care, reassurance, improved diet, change of environment, etc., were definite contributing factors in their improvement, when improvement was made. In the affective disorders, however, the sudden dramatic change in those receiving electro-shock therapy was, in our opinion, largely attributable to this specific treatment.

Bibliotheca Obstetrica

MARINELLO, GIOVANNI: Le medicine partenenti alle infermita delledonne. Divise in tre libri: Nel primo de'quali si curano alcuni difetti, che possono sciogliere il legame del matrimonio: nel secondo si rimove la sterilita: et nel terzo si scrive la vita della donna gravida, fino che sia scita del parto, con l'ufficio della levatrice. Venice, F.de Franeschi Senese, 1563. 80., 258 1. 5 1. 14.7 cm.

——: Les maladies des femmes et remèdes d'ycelles. . . . Paris, I. Berjon, 1609. 863 p. 17¼ cm. translated by Jean Liebaut. (ML)

Neither Siebold nor Baas mention this Italian. Bayle has a brief note describing him as a XVI century Italian physician who translated into Latin the works Hippocrates, and who was the author of a treatise on fevers and also one on the plague. One of his translators speaks of him as a physician of Formia, but usually he is called a Venetian.

His "Le Medicine partenenti alle infermita della donne" was translated into Latin by a French physician, Jean Liebaut. This passed for a while as an original work. When later it was translated into French the original authorship was acknowledged. The French edition has a full page illustration of a cesarean section.

THE DIAGNOSIS AND TREATMENT OF RUPTURED CERVICAL DISK*

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Norfolk, Virginia.

Since the memorable work on ruptured intervertebral disk by Barr and Mixter in the early thirties innumerable articles have been published, and the syndrome taught in medical schools and clinics until today a ruptured lumbar disk syndrome is almost as clearly understood by the average doctor as is the diagnosis of pneumonia. Such is not the case, however, when dealing with neck and upper extremity pain. Indeed, this subject is only now becoming popular and the American literature contains only scattered excellent accounts of this painful condition. Older isolated records of recognized disk lesions in this region were by Stookey in 1928, Dandy in 1928, and Elsberg in 1931, all referring to it as a chondroma, causing cord compression rather than nerve root irritation. The clinico-pathologic subject was first clarified by Semmes and Murphy in 1943, with further useful articles appearing by Spurling and Scoville, Ulmer and Meredith, and Kristoff and Odom. Keegan has been interested in the isolated segmental and dermatome distribution of both the upper and lower extremity. He has mapped out sensory changes in hundreds of single nerve root compressions and recently revised the old dermatome outlines advocated by Sherrington, Head, Foerster and others, that were taught in neuro-anatomy and neurology courses for years. Keegan's description certainly makes for accurate localization of nerve root compression when surgery is done for relief of upper or lower extremity pain. These dermatome descriptions will be alluded to later in the discussion of the symptom complex of the ruptured cervical disk. A ruptured cervical disk is much less common than one in the lumbar region. However, they are so frequent that the average industrial surgeon or neurosurgeon will usually have one or more such cases under treatment most of the time. The symptoms may be acute or chronic in nature, and may require operative or conservative treatment just as the lumbar disks do. Also, they may at times require more precise neurologic knowledge for diagnosis, and more finesse for surgery than the lumbar disk.

Some peculiarities of the cervical spine and cord relationship cause even the smaller protruded disks to cause potential serious and sometimes permanent damage to the neural structures. The lower portion of the cervical spine is more mobile than the upper which accounts for the usual disk being found at $C._5$ or $C._6$ interspace. The spinal cord occupies the entire spinal canal at this level and compression on the cord isn't counteracted by displacement as it is lower in the canal. The nerve roots leave the cord at right angles and makes a quick short exit through the intervertebral foramen, rather than at an elongated downward angle in the lumbar region free of cord substance. Since the first cervical root emerges above the first cervical vertebra there are eight pairs of cervical nerves, seven emerging through the seven intervertebral foramina. Consequently, the sixth cervical root leaves through the fifth intervertebral foramen and the seventh root through the sixth foramen, etc.

The intervertebral foramina are vertically elongated and narrow from side to side. This makes for signs of root irritation when even a small disk is displaced pushing the nerve root against the bony edges. Osteophytes often extend into the foramen, further narrowing it and at times compressing the nerve root. The ligamentum flavum is much thinner here, generally 3 to 5 m.m., and it is almost completely covered by the adjacent laminae excepting closest to the spinous processes. Just as the fourth and fifth lumbar vertebra are at the level of the greatest stress in the lower spine impinging on the fifth lumbar and first sacral roots, so the fifth and sixth cervical vertebra are the common sites for ruptured cervical disks, pressing on the sixth and seventh cervical roots. Consequently, peripheral distress of pain and sensory changes in a $C._6$ root lesion are felt along the outer side of the arm and radial side of the forearm with greatest numbness being in the thumb and forefinger. At $C._7$, root involvement would be along the lateral side of the arm, dorsal surface of the forearm with numbness of the three middle fingers. usually worse in the forefinger. The less common $C._8$ root pain is felt along the ulnar side of the forearm and outer two fingers.

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

Careful history and neurologic examination will usually suffice to make an accurate diagnosis and localization of a ruptured cervical disk. With or without a history of injury the patient generally, complains of a crick in the neck to a severe wryneck pain at the onset. This may be the only symptom for several days to weeks. Then, with extension of the pain, it usually radiates into the back of the head, into the interscapular space, onto the shoulder, about the upper chest anteriorly and posteriorly and then down the upper extremity to the hand, as described in the sixth and seventh cervical dermatome distribution. The pain may become agonizing in its severity so that moving the neck may send lightning shocks along the entire extremity. For this reason muscle spasm causes the patient to hold the neck quite still. X-ray will show a straight cervical spine without lordosis. Many patients find it impossible to stay in bed more than two or three hours at a time without seeking another position to relieve pain. As the lesion progresses, weakness, fibrillation and atrophy of the smaller muscles become evident. Objective muscular weakness is hard to demonstrate in the usual case, but when present helps to localize the level of the ruptured disk. The biceps is supplied by $C._5$ and $C._6$ root, and is expected to be involved in a $C._5$ interspace lesion. This reflex will be diminished. If the triceps muscle is weak a lesion is expected at $C._6$ interspace and this reflex will be diminished.

When weakness and atrophy have progressed to any degree, some permanent disability will usually follow.

Patients can tolerate the discomfort of numbness and rarely will a person be willing to submit to operation for this symptom alone. In my experience the precise localization of numbness in the hand is of greater localizing value than the description of the pain. The latter may be present for sometime before the onset of numbness. Numbness may be only subjective and when tested objectively no sensory changes can be demonstrated. Raising the intraspinal pressure as when coughing, straining at stool or sneezing will often markedly exaggerate both pain and numbness. A typical lightning electric shock like sensation courses though the extremity in the involved dermatome. One of the most useful aids utilized in reproducing the pain is with the patient in the sitting position, to bend the neck toward the affected side and the examiner makes downward pressure from the top of the head. This maneuver further narrows the interspace making more pressure on the involved nerve root. Some writers consider this neck compression test almost pathognomonic.

Some clinics routinely perform lumbar punctures and do a contrast media study before operating on a cervical disk. Most operators prefer to be guided by the clinical findings in lieu of the pantopaque test because of the difficulty of obtaining satisfactory x-ray films in the cervical region. This is because the oil placed in the lumbar canal breaks into globules in the cervical region and becomes streaked, lacking localizing value. Also, oil that is allowed to break up is quite difficult to remove at the conclusion of the test. Symptomatic arachnoiditis may follow.

Treatment for this lesion is either conservative or operative depending on the individual case. The chronic pain or subacute one should have bed rest for some time, using neck or skeletal traction as indicated. If the symptoms subside, a collar may be worn for some time to afford comfort. Physiotherapy in the form of diathermy and hot packs is helpful. It is dangerous to manipulate the neck as the segmental pain may be converted into cord compression by massive herniation of the herniated nucleus with resulting severe cord damage.

Operative treatment is desirable in the acute case which is not relieved by a few days bed rest. The pain appears to be more agonizing than the ruptured lumbar disk case, and the patient is anxious for the operative relief. Generally under local or intratracheal anesthesia a midline straight incision is centered over the involved spinous process and a partial hemilaminectomy of the involved interspace region is performed. The nerve is found displaced posteriorly and usually stretched quite tight over the protruded disk. The disk may be soft, in which case the nerve root can be displaced gently and the fibroelastic nucleus material removed. On the other hand, if the protrusion of the disk is hard, cartilaginous, or osseous, damage may be done to the nerve in trying to displace it. In this type of case it is best at times to disregard the protrusion and make a wide bony decompression for the nerve by removing the posterior border of the facet. This maneuver will often prevent irreparable damage to the nerve root with resulting partial paralysis of the hand. Ordi-

narily pain is relieved satisfactorily by this type of operative procedure.

No cast is necessary and the convalescent period is shorter than in the lumbar disk cases if the patient is a laborer. It appears safe for him to resume full work in three months rather than six for the lumbar disk case.

Discussion of Complications

Those lesions to be considered in the differential diagnosis are most commonly confined to the neck and shoulder.

1. *Acute Trauma*: A. Fractures, dislocations and sprains of the clavicle, scapula and humerus, cervical spine, shoulder and acromio-clavicular joint. These have definite history of an injury.

B. Tear of musculo-tendinous cuff, especially the supraspinatus tendon. Do not always have a clear history of injury because of degeneration of the tendon over a long period. The disability causes weakness of active abduction but passive motion is usually of full range. Pain is not a prominent feature.

2. *Subdeltoid bursitis* (or supraspinatus tendonitis) is not associated with injury. The onset is usually sudden, pain is severe in the shoulder, but radiates as far as the hand at times and in the region of the trapezius muscle. There is pain on active and passive motion of the shoulder joint (scapulo-humeral) and there is local tenderness.

3. *Supra (or infra) spinatus tendonitis* with calcification is similar to subdeltoid bursitis, but x-ray shows calcification in the tendon.

4. *Periarthritis (adhesive capsulitis or frozen shoulder)* causes both pain on motion and severe limitation of active and passive scapulo-humeral motion.

5. *Arthritis*: A. Cervical spine.—Osteoarthritis. The symptoms and signs are chiefly in the neck but pain may be referred to the shoulder and even to the fingers. No physical signs are found in the shoulders. X-ray examination shows arthritis.

B. Shoulder joint—rheumatoid arthritis occasionally begins in the shoulder without involvement of other joints. It is similar to periarthritis at first but the sedimentation rate is elevated and the patient may have fever.

6. *Cervical rib* or scalenus anticus syndrome may allow full shoulder motion without pain on passive motion. The pain is worse in the upright position and is relieved by supporting the arm. Traction on the arm may obliterate the pulse and increase the pain.

7. *Fibromyositis* may follow exposure or exertion, is usually of short duration, and the physical findings are minimal excepting for muscle tenderness.

Brachial neuritis and tumors of the plexus or peripheral nerves cause confusion at times. But a careful history and neurologic examination will usually promptly exclude these conditions. A plexus tumor was successfully removed last week which had caused symptoms suggesting a cervical disk, but point tenderness in the neck and a palpable tumor made the correct diagnosis possible.

In conclusion, an examiner should remember that a ruptured cervical disk is a frequent lesion and, if correctly diagnosed and treated, can spare a patient prolonged suffering and financial disability.

Wainwright Building.

PSYCHOSOMATIC MEDICINE: MECHANISMS COMMON TO SOME GASTRO-INTESTINAL DYSFUNCTIONS*

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"Many deaths take place in men before they come to die." (Gordon Bottomley).

The griping belly is one of the most difficult problems in medicine. A long, costly, repetitious and painful search for organic pathology as a direct or indirect cause often proves fruitless. But little or no attention is given to the *person* who has the chronic bellyache. How long shall we, as physicians, continue to disregard the patient as an integrated whole, mind-body not separated?

In a series of 200 patients reviewed by me in 1946 the site of the chief complaint in 53% was in the gastro-intestinal tract.[1]

SITE OF CHIEF COMPLAINT

	No.	%
Multiple	96	48.0
G. I.	53	26.5
Musculo Skel.	13	6.5
Resp.	9	4.5
Heart	9	4.5
Head	7	3.5
N. S.‡	5	2.5
Genital	3	1.5
Urinary	3	1.5
(Diabetic)	2	1.0
	200	100.0

‡Four were multiple sclerotics, two of whom were previously diagnosed as neurotic.

Material for this paper is taken from a study of 100 patients having "functional" gastro-intestinal disease. There are striking similarities in the life stories and certain dominant factors are common to the group: surgery, anxiety, dominant mother or father, 68% married, dominant husband or wife, menstrual difficulties, child-bearing and child-rearing difficulties.

They are discouraged and depressed, and confusion about the medical and surgical advice given them is an additional burden. Insomnia, easy fatigability, decreased sex drive, and job, school or marriage difficulties are frequent. As individuals they are extremely meticulous and overly conscientious. They have periods of high work productivity, followed by illness caused by "overwork", requiring from a few hours to days or weeks for recuperation. They seem eager to cooperate and they give explanations in which they attempt to justify their thoughts and deeds—their very lives.

As these patients are studied one realizes that, in most, the condition has it origin in early life—possibly in the prenatal stage, according to Halliday[2].

Certain circumstances bring about lack of love. These circumstances may sensitize very early in life. Should these constellations reappear in later stages of life there is reaction. Such reaction varies directly with the stress and is accompanied by deranged physiology of the gastro-intestinal tract—an "allergy to circumstance."

There is an immaturity and a tendency to self-sacrifice connected with their lack of love-food.

As love-food produces satisfaction and security, so will the lack of love-food produce dissatisfaction and insecurity.

Love-food is taken in by the gastro-intestinal system, therefore, the lack of it is *felt* in the same system. The gastro-intestinal tract has been called "the sounding board of the emotions."

To the newborn infant food and love are synonymous. Ideally they come from the same source, mother: a deprivation of either, partial or complete, will cause illness or death. When the enfolding arms of the mother hold the infant in contact with the breast the warm flow of milk, the gentle rocking, the soothing murmurs produce the ultimate in satisfaction. The baby is loved and fed. He feels warm, satisfied, and secure. Satisfaction and security are necessary for his normal development—mind and body.

But what occurs if the baby is fed, let us say, on a strict schedule by a tired, discouraged, bored or immature mother? The indifferent offering of the unloving breast or the propping up of a hard impersonal nursing bottle are acts without love. The baby will make every effort to secure love and will call for attention by crying, restless movements, "colic", broken sleep, refusal of food and the like.

Variability exists in love offered and love needed. Some mothers have little or no love to give, and

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

some infants seem to have greater need for love.

Great mental stress or anxiety of the mother influences the health of the baby. An immature mother often becomes panic-stricken when faced with the intolerable burden of caring for her baby. It has been said that, unconsciously, such a mother resents the baby because she, herself, longs for the security and absence of responsibility of infancy.

Loss of the mother by any means, with enforced care by an unacceptable mother substitute, is a frequent finding. But whatever the causes, lack of love or loss of love is intolerable and the infant will attempt to get it. Failure to receive love is met by seeking the next most comforting condition—approval. If this is not found, then strenuous efforts are made to avoid disapproval. This approval seeking-disapproval-avoiding mechanism is the major finding in this series. So common is it that, after listening to the symptoms of a patient with "functional" gastro-intestinal disturbance, one can almost always back-cast the emotional factors in early life largely responsible for them.

These patients become conditioned early to approval seeking-disapproval avoiding. They become the "good" children, the "good" students, the "good" employees. They appear to be models of good character. They seem to be generous and steadfast friends. But, if any situation disturbs their delicate emotional balance, they show infantile reaction patterns which appear as derangements of the gastro-intestinal tract.

In their relations with others, the reaction to a dominant individual is characteristic. There is a carrying over—a transfer of attitude to the dominant person who becomes, in the patient's not conscious mind, the unloving parent image.

The teacher has a profound influence upon these patients. "Indigestion", "delicate stomach", "bowel trouble", "chronic" appendix, are frequently encountered in the history of the school years.

Later, in the working world, relationships with fellow employees and with employers afford a wide and fertile field for a variety of situations. Emotional crises because of approval seeking-disapproval avoiding are inevitable. These are accompanied by somatic showers to the gastro-intestinal tract with the usual fatigue, headache, insomnia, and anxiety.

Marriage, according to the partial analysis of this series, is a dreary procession of breakdowns—of bearing without fortitude the mature responsibilities of mating and parenthood.

In the women a history of pelvic as well as abdominal surgery is found in almost all. Menstrual difficulties are in 100% and the menopause is prolonged and stormy. Pregnancy is dreaded. Childbearing is arduous and followed by a delayed exhausted recovery period.

The men are dispirited but "good" parents who demonstrate an almost fanatical approval seeking-disapproval avoiding. Although not impotent, there is definite decrease in sexual appetite.

One of the most remarkable findings is the constancy with which the patients in this series have married dominant partners. Unhappiness is the rule but divorce is infrequent. There is a definite tendency to self-sacrifice. They shoulder the load of responsibility and trouble for their families and friends.

From this preliminary study this almost constant characteristic appears to be part of the love deprivation gastro-intestinal syndrome. However, this tendency also appears in certain other psychosomatic illnesses. It is quite possible that certain factors are fundamental to all neuroses. This will be given further study in other papers now in preparation.

In this series the approval seeking-disapproval avoidance mechanism was found in all patients. Bearing this in mind is a workup of a patient with functional gastro-intestinal disease complete, *unless* there is added to the classical physical and laboratory examinations a thorough psychiatric examination.

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1000 West Franklin Street.

Discussion

Dr. John Taylor Ransone, Newport News: I have very much enjoyed this paper, including the philosophical idea of love and food having a close connection. But for the good of those present I want to ask if we do not forget the work of Walter B. Cannon, in 1909, on "The Influence of Emotional States on the Functions of the Alimentary Canal" and, in 1915, his "Bodily Changes in Pain, Hunger, Fear, and Rage", and the compilation of research by H. Flanders Dunbar, in 1935, entitled "Emotions and Bodily Changes." Also, Alvarez, in 1943, threw a lot of light on what is really happening in his "Nervousness, Indigestion, and

Pain". It seems to me that most of these gastro-intestinal symptoms of functional type are due to too much adrenalin stimulation, or the reverse, or the change from one to the other.

DR. WILLIAMS, closing the discussion: Thank you, Dr. Ransone. I am not sure if your comments are entirely clear to me. May I refer you to my original paper presented at the Virginia State Society in 1946. In that paper the bibliography is fairly complete. Naturally I assume when I used the title "Psychosomatic Medicine," etc., that it will be taken for granted that I am quite familiar with the work of the pioneers of my speciality.

Terramycin Reported Effective Against Two Types of Pneumonia.

Results indicate that terramycin, a newer antibiotic drug derived from a mold, is remarkably effective against both pneumococcic and virus pneumonia, a group of New York doctors report in the August 12 *J.A.M.A.*

Terramycin proved to be valuable in treating 18 patients with pneumonia due to pneumococcus microbes and seven patients with virus pneumonia, Drs. George W. Melcher, Jr., Count D. Gibson, Jr., Harry M. Rose and Yale Kneeland, Jr., of the Columbia University College of Physicians and Surgeons and Presbyterian Hospital say.

The drug was administered by mouth in the form of tablets or capsules. Vomiting and nausea occurred in some patients as side effects of terramycin, but these symptoms seemed less severe than similar reactions observed in patients following administration of aureomycin, according to the doctors.

New Drug Against Toxic Goiter.

Promising results in treating patients for toxic goiter with a new synthetic drug, tapazol, are reported by Drs. William S. Reveno and Herbert Rosenbaum from Wayne University College of Medicine, Detroit (August 19, *J.A.M.A.*).

These findings should be considered preliminary. The drug has been used in only 18 patients and observations have covered only a six-month period.

Tapazol is not now generally available to doctors. Its use is limited to experimental studies. The drug is an antithyroid compound with action 25 times as powerful as propylthiouracil, a compound commonly used in treating overactivity of the thyroid gland, according to the doctors. Abatement of symptoms occurred in patients with toxic goiter variously five, six and eight weeks after administration of tapazol was begun, according to the article. Two patients who had relapsed after treatment with propylthiouracil were relieved after 57 and 51 days of treatment with tapazol, respectively.

"In the small group of patients observed, tapazol exhibited effective antithyroid activity closely resembling that of propylthiouracil but with a potency approximately 25 times greater."

"Toxic reactions were not encountered, but more time and treatment of a larger number of patients will be required for assessment of this highly important factor."

THE USE OF THE MALE SEX HORMONE IN THE INHIBITION AND SUPPRESSION OF LACTATION*

Joseph C. Parker, M.D.,
Richmond, Virginia.

The problem of inhibition of lactation in obstetrical patients has become increasingly frequent in the past several years. While the older methods of inhibition and suppression of lactation, such as the use of breast binders, ice bags, etc., have proven in the main very effective, there are some objections to these methods on the part of both patients and physicians. One of the most frequent objections voiced by the patient during the process of inhibition or suppression of lactation is that of discomfort. Another complaint against the breast binder is the cosmetic objection voiced by some patients. With a tight breast binder in place, respiratory excursions are certainly hampered and limited in extent. This, of course, raises the problem of improper aeration of the lungs, particularly where there is potential or actual pulmonary infection. Furthermore, unless the breast binder is properly and expertly applied, the incidence of mammary abscess is materially raised.

Thus, the problem resolves itself, in so far as the author is concerned, into the use of an agent to inhibit lactation, or suppress an already established lactation, over-coming the objections enumerated above, without producing additional unpleasant and unwanted side reactions. Some and varied forms of estrogenic, or estrogen like, substances have been employed for this purpose, and with very good results in so far as the primary objective for which they are used is concerned. However, there are two chief objections to this form of therapy. The first is that lactation, once suppressed or inhibited, tends to recur following the cessation of use of the drug. Secondly, a good many users of this type of drug have reported withdrawal vaginal bleeding, in excessive amounts, when the drug is stopped. The reports concerning the carcinogenic properties of the estrogen and estrogen like substances are so conflicting and unsubstantial in respect to the human, that this factor is not considered seriously here. However, it is certainly worth while considering all potentialities and possibilities resulting from the use of any therapeutic agent before using it indiscriminately, particularly when dealing with any type of hormone therapy.

Therefore, considering the need for such an agent, and taking into account the objections to the above used measures, it was decided to try to determine the effectiveness of the male sex hormone in the management of this problem. The action of the male sex hormone, like that of the estrogens or estrogen like substances in the inhibition or suppression of lactation, is thought to be through suppression of the production of the lactogenic hormone by the anterior lobe of the pituitary gland. The androgenic hormone has the advantage over its counterpart, estrogen *et al.*, in that it does not produce a growth effect on the endometrium. Consequently, when the therapy is stopped, vaginal bleeding is not an entity to be reckoned with, as is the case when estrogenic substances are used. Furthermore, the reports so far observed indicate no possible carcinogenic factor to be considered when this agent is employed in the female. The chief objection so far voiced against the use of androgenic substances in the female is that of virilization. When the drug is employed for the purposes herein stated, the dose is so small as to negate that possibility. There may be an atrophic effect on the vaginal mucosa and endometrium, but again the small dosages employed in this series did not produce any clinical evidence of such action.

The material used in this study consisted of forty-two unselected cases in which androgenic substance was used to inhibit the onset or suppress an already established lactation. At the beginning of the study ten patients were given oral testosterone in the form of linguets in 6 mgm. sizes. However, it was decided that the injectable drug would be cheaper in the long run due to the relatively low dosage of injectable testosterone as compared with the oral form of the preparation. The injectable form also offers the additional advantage of faster action with less bother to the patient.

There were ten patients in this series who received an oral form of the male sex hormone, either methyl testosterone (10 mgm. tablets) or lingusorbs (Ayerst)

*Read before the Richmond Obstetrical and Gynecological Society in Richmond, December 16, 1949.

(6 mgm. tablets), the latter being absorbed from the buccal mucosa, while the former are swallowed. The dosage of these two drugs employed varied from a total dose of 450 mgm. of methyl testosterone to 216 mgm. of lingusorbs (Ayerst).

The drug was usually started on the first postpartum day if inhibition of lactation was desired, and at varying times during the puerperium to suppress an already established lactation. The methyl testosterone was employed in 30 mgm. doses three times daily for a period of from three to five days in three patients, resulting in complete inhibition of lactation in all three cases. There were no undesirable side effects noted in any case. The lingusorbs (Ayerst) were used in doses of 18 mgm. three times daily for four days in seven patients. Four of these patients did not receive the drug regularly and one of them had her breasts pumped and bound on the fourth postpartum day resulting in suppression of lactation without further complications. All four of these patients had moderate engorgement of the breasts accompanying moderate secretion, but none of them suffered any inflammation or infection. Three of them required no additional methods to suppress the lactation in spite of the irregularity of consumption of the drug. A slight amount of lactation was noted in all patients receiving the oral form of the drug for several days, but by the time of discharge, usually on the seventh day, all of them were "dry". The only adjunct to hormone therapy used in the series was the employment of a well fitting brassiere to support the breasts. The three patients who received the lingusorbs (Ayerst) regularly had lactation inhibited without incident.

Of the remaining thirty-two patients in this series all of them received injectable testosterone in total dosages of 100 to 150 mgm. The material used in this study was testosterone 100 mgm. per c.c. in aqueous suspension, and was furnished by Ayerst, McKenna, and Harrison. As was the case in the employment of oral testosterone, the majority of the patients were started on the drug on the first postpartum day to inhibit lactation. The dosage employed was 50 mgm., I.M., on two successive days in twenty-eight cases, while four cases received a third injection of 50 mgm., I.M., to completely stop lactation or reduce engorgement.

In no case were there any side effects or infection noted. Three patients (10%) were classified as having slight engorgement, while three (10%) were classified as having moderate engorgement. There were no cases of severe engorgement noted in this series.

Thus in the thirty-two patients, in whom injectable testosterone was used to inhibit lactation, 6 or 20% had some classification of engorged breasts. Seventeen or 53% of these patients had slight leakage of milk for from one to five days after the initiation of treatment. One or 3% had moderate lactation. This gives a total of eighteen or 56% with some amount of lactation for several days following the use of this drug. However, in no case were additional methods required to completely inhibit lactation other than the use of an additional 50 mgm. of testosterone, I.M., as noted above. In no case in this series was there noted any excessive vaginal bleeding either during or immediately following treatment or at the time of resumption of normal menses. There was also no particular delay noted in the time of resumption of normal menses, the majority of the patients menstruated normally by the time of the six weeks check up examination.

SUMMARY

Forty-two unselected cases are reported in which testosterone, either in oral or injectable form, was used to inhibit or suppress lactation.

Discounting the four patients who did not receive the oral preparation regularly, there was suppression of lactation in 100% without undesirable side effects in any.

There were no cases of infection of the breasts, and relatively few with engorgement of any consequence (3 cases or 10%).

No additional methods of inhibition or suppression of lactation were required in any case where the drug was given regularly and on schedule other than an occasional extra 50 mgm., I.M.

CONCLUSION

It is believed that injectable testosterone in 50 mgm. doses on two successive days is a safe and effective means of inhibiting or suppressing lactation. The drug can be given at any time during or before the onset of lactation with good results. Side effects such as virilization, excessive vaginal bleeding, or irregular vaginal bleeding were not found to occur in this small series.

1001 West Franklin Street.

CLINICAL PATHOLOGICAL CONFERENCE*

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

Harry Walker, M.D., *Editor*
William Kay, M.D., *Associate Editor*

Case No. 1.

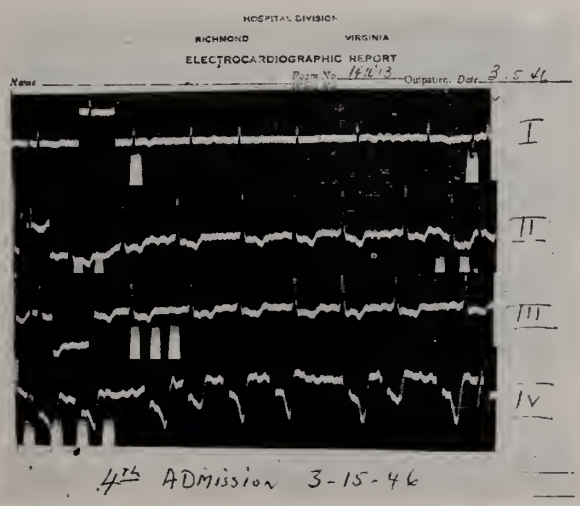
Protocol from Medical College of Virginia

Clinical Discussion—J. Edwin Wood, M.D., Professor of Practice of Medicine, University of Virginia, Department of Medicine

Pathological Discussion — Gordon R. Henniger, M.D., Associate Professor of Pathology, Medical College of Virginia

First Admission

On February 17, 1934, a 19 year old white boy drove his car into a bridge. The car turned over, caught fire, and he was pinned under it. Passersby were able to drag him out and he was admitted about a half-hour later in a somewhat drowsy state. Blood pressure 130/90. There were severe burns of the extremities, a depressed fracture of the left frontal bone, and lacerations of the scalp and chin. The heart, lungs, and abdomen were normal.



The urine was normal save for a heavy trace of albumin and a sediment showing 20-25 RBC, an occasional WBC, many hyaline and a few granular casts. The hemoglobin was 90%, RBC 4,720,000, and WBC 34,000, with 88% polys., 9% lymphs., and 3 early cells. The Wassermann was negative.

Course: During the first few days he was confused and the temperature was constantly 101-102° F. The wounds and burns were healing. The temperature then rose to 103-104 and there were findings of consolidation in the right lung. By x-ray this was chiefly in the middle lobe with some mottling of the upper lobe. The WBC was 28,800 with 90% polys., 9% lymphs., and 1 early cell.

During the ensuing 2-3 weeks he cleared up mentally and the temperature trended downward, but was always elevated. A second x-ray showed clearing of the right lung. The CTR was 38%. The aorta appeared normal. The right interlobar pleura was thickened.

On the 25th day his abdomen became distended with evidence of free fluid and the liver edge was felt four fingers below the costal margin. The spleen was not felt. There was no jaundice. In the next day or two this distention became more marked, the superficial veins over the abdomen and lower chest were prominent, and there was edema of the abdominal wall which stopped abruptly at Poupart's ligament below, but extended onto the lower chest wall above. The hemoglobin was 73%, RBC 3,940,000 and WBC 9,500 with polys., 78%, and lymphs., 22%. The icteric index was 13 units. The blood NPN, sugar, and chlorides were normal. The temperature was now of septic type from normal or 99 to 101-102 daily. After four injections of salyrgan the abdomen subsided considerably.

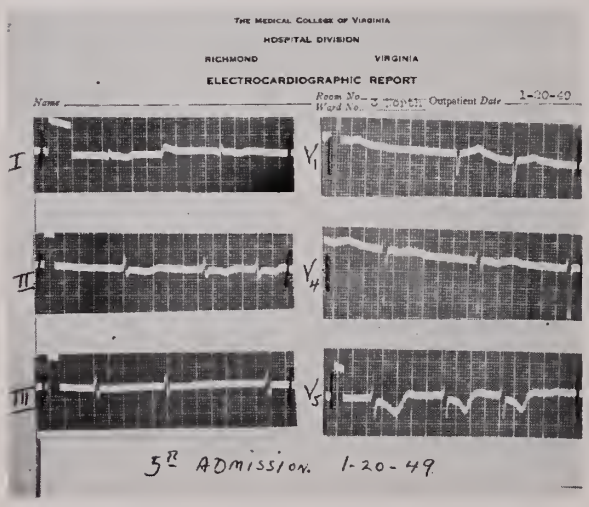
During the next six weeks he gradually improved and was discharged on the 68th day in good condition.

Second Admission—Three Weeks Later

For 6-8 days after discharge he had felt fine. He then developed an aching pain in his right shoulder and felt pepless. This continued and he began to have pain in the right upper quadrant, aggravated by deep breathing. All grew worse.

*To be presented before the Medical Society of Virginia at its meeting in Roanoke, October 9, 1950.

On examination the temperature was 98.6, pulse 90, respiration 20, and blood pressure 130/80. The heart and lungs were normal except for a systolic apical murmur not heard by all examiners. The abdomen was considerably distended with fluid. The liver was 4-5 fingers below the costal margin. The wounds and burns were well healed except for one area on the left leg which showed moderate infection.



The urine show 1+ albumin, and a few hyaline and occasional waxy and granular casts. The blood counts were normal as were the PSP kidney function test and the icteric index. X-ray films and fluoroscopy showed normal lungs with a somewhat high right diaphragm which was normal in contour but did not move too well. "The heart appeared slightly larger than the average". The right interlobar pleura was seen.

Course: During the first 48 hours his temperature reached 101. Thereafter it never exceeded 99.2. All findings promptly subsided and he was discharged on the 23rd day after treatment of the left leg burn.

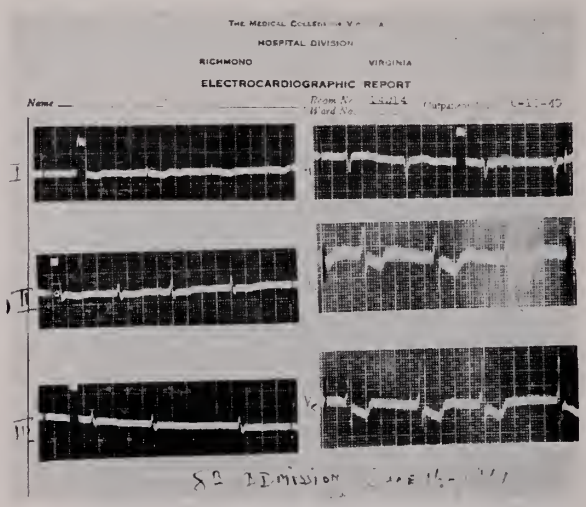
Third Admission—Five Years Later—Age 24

On the night of October 17, 1939, he drove into another car and both knees were thrown against the dashboard; following this he could not walk. Examination showed fractures of both patellae. The heart was normal in size. There was a loud blowing systolic murmur over the precordium. The blood pressure was 90/65 at first, leveling off at 130/70. He stated that he had been refused for insurance a year or so before because of a heart murmur. As a child he had had scarlet fever. No history of rheumatic fever. The urine, blood counts, and Wassermann were normal. The patellae were repaired. His progress was slow but satisfactory and he left on the 67th hospital day.

Fourth Admission—Seven Years Later—Age 31 (3-14-46).

On the day of entry he had sudden severe pain in the right flank, requiring two hypos for relief. In previous months he had had several similar but milder attacks; he stated that his physician found blood in his urine in one of these.

Some five years before (i.e. a year or two after his third admission above) he had noted the gradual onset of swelling of the feet and ankles and shortness of breath. He saw a physician who gave him digitalis, which he had taken since, and had been troubled little or none by these symptoms. (This physician, an experienced clinician, states that the patient came by his office late one afternoon in 1940 or '41—records misplaced—in moderate congestive failure with a grossly irregular cardiac rhythm.



There was a to and fro apical murmur and the heart seemed considerably enlarged. Hospitalization was advised and refused. Patient was given digitalis, but did not return. This doctor saw him on the street some days later and he seemed to be doing well.)

On examination he seemed to be in pain, with temperature 97.4, pulse 100, respiration 18, and blood pressure 130/80. The lungs were clear. The heart seemed enlarged and the rhythm was grossly

irregular. No murmurs were heard (three examiners, including the physician who saw him in 1940 or '41 above). The abdomen was normal and there was no edema.

The urine was normal except for a 1+ albumin. The hemoglobin, RBC, differential, NPN and Wassermann were normal. The WBC was 13,000 with 81% polys. An electrocardiogram showed auricular fibrillation with low T_1, low ST_2 and negative T_2, low ST_3, diphasic T_3, and low ST_4 with negative T_4.

Direct cystoscopy and pyelograms were normal. He was discharged on the 4th hospital day on digitalis, grains 1½.

Fifth Admission—Three Years Later—Age 34 (1-19-49)

He had been getting along pretty well working as a draftsman until one week before admission he had several nose bleeds. Shortly thereafter he had pain in the right lower chest and the right upper abdomen felt sore and tender. He began to have swelling of the feet and ankles and got out of breath unusually easily. These symptoms grew worse.

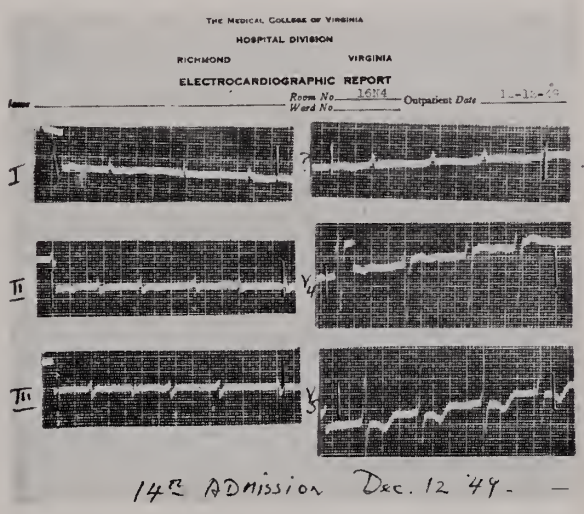
On examination he was in no distress. The temperature was 99.8, pulse 88, respiration 20, blood pressure 160/95, and weight 166 pounds. The neck veins were distended. There was evidence of fluid in the right pleural cavity. The cardiac apex was in the anterior axillary line in the 6th or 7th space. The rhythm was grossly irregular. No murmurs were heard. The liver was 2 fingers below the costal margin and somewhat tender. The abdomen contained a small amount of fluid, and there was edema of the shins, ankles, and feet.

The urine, blood counts, NPN, and sugar were normal. The flocculation test for syphilis was positive and the Wassermann negative; a repeat showed both doubtful. An electrocardiogram showed auricular fibrillation at rate of 60. The QRS complexes were low and somewhat slurred in the limb leads; T_1 was negative or diphasic; T_2 negative; T_3 negative or isolectric; T diphasic in V_4 and negative in V_5. A chest film showed enlargement of the cardiac shadow, with pericardial effusion suggested. The CTR was 64%. A small amount of fluid was suggested at the right costophrenic angle.

Course: He was kept in bed on a salt free diet, digitalis, ammonium chloride, and mercurial diuretics. He lost 21 lbs. in eight days. His blood pressure ranged from 130-140/90-85. He became symptom free and was discharged on the 8th hospital day to follow a salt free diet with Westsal, digitalis grains 1½, and ammonium chloride grains 60, daily.

Sixth Admission—Eleven Days Later—(2-7-49)

For a week he had gotten along pretty well and then the edema recurred. His weight rose to 153. He was nauseated at times and vomited occasionally. He became confused and antagonistic. Examination showed nothing new. The urine had a specific gravity of 1.009 with 2+ albumin, and many hyaline casts and 3-4 WBC/HPF. The blood counts and blood sugar were normal. The blood NPN was 56, chlorides 94 (serum under oil), sodium 134 and potassium 4.8 meq. The flocculation test for syphilis



was positive and Wassermann negative. The icteric index was 12 units, cephalin cholesterol 3+, blood proteins 7.4 grams % with albumin 4.1, serum bilirubin 1 mgm., and BSP 15% retention.

Course: He became more confused and uncontrollable, requiring transfer to the Nervous and Mental Section. His temperature did not exceed 98.8 and his blood pressure ranged around 120/80. Several electrocardiograms showed auricular fibrillation at rate of 50 with low slurred QRS complexes and isolectric or slightly negative T waves in the limb leads. T was negative in V_4 and V_5. A spinal puncture yielded clear fluid with protein 40, 1 cell, mastic 0-0-0-0-0, chlorides 115 meq., and Wassermann negative. A repeat flocculation and Wassermann on the blood were negative.

Improvement was gradual and he left the hospital on the 37th day, mentally clear and fairly well compensated.

During the next three months he was little changed. Venesection of 500 cc. in the hospital seemed to relieve his edema and congestion for a short time on one occasion. The laboratory tests, including electrocardiograms, were the same except that the NPN was normal several times. The temperature was normal and the blood pressure was 120/80.

On June 15, 1949, he was admitted for the eighth time because of ascites and bilateral pleural effusion. He was somewhat breathless. The urine showed 1+ albumin. The blood counts, sugar, and NPN were normal. The blood chlorides were 90.1, sodium 127, and potassium 4.2 meq.; the proteins were 6.65 with albumin 3.17. A second phlebotomy was not helpful. He was placed on a soft diet with salt and the ammonium chloride omitted, without benefit. The previous program of salt free diet, ammonium chloride, mercurials, and digitalis were resumed with gradual improvement and he left the hospital on the 18th day after a weight loss of 13 lbs.

From July 1 to December 10, 1949, he was admitted a number of times, chiefly for the removal of pleural or abdominal fluid. Examination of the heart was the same. The chest fluid had a specific gravity of 1.014, protein 3.5 grams %, and cells 318; the abdominal fluid had a specific gravity of 1.018, protein 3.6 grams %, and 662 cells with 81 polys. The treatment program was otherwise unchanged. His general condition declined. He later developed a sore mouth and gums and the mercurials were omitted. A number of urinalyses and electrocardiograms were unchanged. The hemoglobin dropped to 10.8 grams and the RBC to 3,560,000. The WBC and differential were normal. The blood proteins were 5.7 grams % with 2.9 albumin.

FOURTEENTH ADMISSION—DECEMBER 11, 1949

The night before, he experienced a sharp pain in the right lower chest and examination suggested consolidation in the right lower lobe. His temperature was 101. The sore mouth was still present. The urine showed 3+ albumin with a sediment containing 3-5 WBC, 1-2 RBC, innumerable hyaline and finely granular casts, and 30-40 coarsely granular casts per high power field. The hemoglobin was 11.1, RBC 3,620,000, and WBC 18,800 with 86% polys. X-ray showed a density at the right base suggesting fluid with pulmonary infiltration not excluded. The heart was enlarged with prominence of the left ventricle. The electrocardiogram was unchanged except that T in V_4 was upright.

Course: His digitalis was continued and he was given crysticillin, 300,000 units b.i.d. His temperature fell sharply to normal on the second hospital day and his WBC was 8,900 with 77% polys. on the third hospital day. His lungs cleared and he was discharged on the eighth day.

FIFTEENTH AND FINAL ADMISSION—14 DAYS LATER—AGE 35—(1-2-50)

The ascites reaccumulated and he became more short of breath and orthopneic, with a dry cough. Examination showed bilateral pleural effusion, especially right, ascites and marked edema of the legs. The heart was essentially unchanged. Blood pressure 110/70 to 140/80. There was a small superficial ulcer on the left ankle. The hemoglobin was 11.2, RBC 3,400,000, and WBC 7,800 with 75% polys. The urine showed 2+ albumin with 0-1 RBC, 0-1 WBC, and 1-3 finely granular casts in the sediment. The flocculation test for syphilis was negative.

Course: 6,000 cc. of straw-colored fluid was removed from the abdomen. The right pleural cavity was aspirated a number of times yielding 1,800, 1,725, and 1,635 cc. of similar fluid, the last amount being removed on the 13th day. On the 15th day he had a shaking chill and his temperature rose to 104. He became nauseated and vomited. The left calf was tender and this leg was more swollen than the right. Homan's sign was positive on the left. Penicillin was begun. The prothrombin concentration was 28%. 50 mgm. of dicoumarol was given every few days with the prothrombin concentration ranging from 16 to 33%. Three blood cultures were sterile. The temperature subsided suddenly, lasting only 36 hours. The right chest and abdomen were aspirated again yielding 1,500 and 5,000 cc. of fluid respectively. On the 33rd day mercurials were resumed as he had had none for two months. The ammonium chloride and digitalis had been continued. The ulcer over the left external malleolus grew larger and similar ulcers developed over the left Achilles tendon and the sacrum. He seemed to be feeling better.

On the 39th hospital day about 6:00 P. M. he was talking to his wife when he suddenly said "Wait a

minute, I have a pain in my chest" and fell back dead.

Case No. 2.

Protocol from University of Virginia, Department of Medicine

Clinical Discussion—Kinloch Nelson, M.D., Professor of Clinical Medicine, Medical College of Virginia

Pathological Discussion—James R. Cash, M.D., Walter Reed Professor of Pathology, University of Virginia, Department of Medicine

This is the history of a 71 year old, white housewife who was admitted to the University of Virginia Hospital for nine days May 1950, discharged for a brief period, and then re-admitted to the same hospital for eighteen days in June 1950.

The patient's first admission was on May 23, 1950. At that time the chief complaint was weakness, weight loss and nausea of about five weeks' duration. The patient stated that she had been in good health until about six months prior to admission. At this time she noticed that she was slightly weaker than usual. Weakness apparently was minimal until about five weeks prior to admission when she became markedly weak and noticed that she was losing weight. Mild constipation began about six months before admission for which she took laxatives. These symptoms were accompanied by anorexia, nausea and occasional vomiting. Loss of appetite was definite from the beginning, but spitting up food was irregular and unpredictable. The patient's usual weight was said to be about 160 pounds and she weighed 125 pounds on admission. There were no other complaints and a system's review was entirely negative. Past medical history was not remarkable.

Examination at the time of admission revealed normal temperature, pulse 100, blood pressure 150/84. There was diffuse enlargement of the thyroid gland and with no nodules palpable. There was some dorsal kyphosis, with increased antero-posterior diameter of the chest. The chest was clear to auscultation and percussion. The heart was not enlarged and there was a loud systolic murmur at the apex. A systolic murmur was also heard to the left of the sternum. The rhythm was regular. Examination of the abdomen was negative. Pelvic examination showed rectocele, slight cystocele, slight excoriation of the cervix and a cervical polyp. The remainder of the physical examination was not remarkable.

Proctoscopic examination was normal.

Laboratory studies at the time of this admission revealed RBC of 4,500,000 with 14 grams of hemoglobin. WBC was 9,000. Wassermann and Kahn tests were negative. Urinalysis showed a specific gravity of 1.016, 2+ albumin, no sugar, 2 to 3 w.b.c. per h.p.f., no r.b.c. per h.p.f. and 1 to 2 casts. Repeat urinalysis showed a slight trace of albumin but no other abnormalities and another repeat catheterized specimen showed no albumin and was entirely within the limits of normal.

A stool examination was normal. Blood urea was 57 mgm./100 cc. on May 25, and 29 mgm./100 cc. two days later. Total protein was 7.4% with a normal A/G ratio. Fasting blood sugars showed 100 mgm./100 cc., 135 mgm./100 cc. and 154 mgm./100 cc. Sedimentation rate was 13 mm. in an hour. A PSP test showed 35% excretion of the dye in two hours' time. Gastric analysis showed the presence of free hydrochloric acid after histamine. Agglutinations for tularemia, brucellosis and typhoid were all negative.

The electrocardiograms on the first admission, taken 5/27/50, showed sinus tachycardia, rate 102, normal conduction time, a slight notching of the QRS complexes in Lead III, but actually the tracing was considered normal.

Fluoroscopic X-ray examination of the esophagus, stomach and duodenum revealed no evidence of lesions. In 4½ hours the stomach was empty and the head of the barium meal in the splenic flexure. The X-ray consultant considered the stomach and duodenum normal, and noted some hypertrophic changes in the lumbosacral spine. During her hospital stay she ran a low grade fever at times ranging from 99° F. to 100° F. orally, but was otherwise asymptomatic. She was very quiet and seemed somewhat depressed. Her weight remained constant during her hospital stay. The patient was discharged from the hospital on May 31, 1950. She was given general instructions as to diet and symptomatic treatment, but no specific medication and was advised to keep in touch with the outpatient department for further observation.

Two weeks after her discharge she was referred

back to this hospital and re-admitted on June 17, 1950. On admission she stated that she had been all right up until a day or so before although she continued to feel weak. On the day prior to readmission she developed a belching attack and states that because of the belching she was sent to the hospital. A physician's note sent with the patient indicated that she had been running a low grade fever and rapid pulse, and that her cardiac murmur had increased in intensity. Repeated attempts to obtain a more detailed and specific history failed, owing to apathy and weakness. No pain occurred at any time.

Examination at the time of admission revealed temperature of 99.6° F., pulse 96, blood pressure 130/70. Thyroid enlargement was again noted and it was felt that there was a nodule present in the right lobe. The heart did not seem to be enlarged and there was normal rate and rhythm. There was a systolic murmur over the entire precordium heard best at the apex. The abdomen was negative, except for diffuse voluntary spasm. Dorsal kyphosis was again noted. The remainder of the examination was not remarkable. During this second admission the patient again ran a temperature ranging from 99° F. to 100° F. during the first week, and increasing slightly during the next week to 100° F. to 101° F., and finally reaching a sustained temperature of 104° F. to 105° F. on the last four days of her illness. The pulse rate varied from 90 to 140.

During this second admission seven catheterized specimens were done between 6/18/50 and 7/3/50 and showed specific gravities ranging from 1.014 to 1.026, an occasional slight trace of albumin, no sugar, white cells in the sediment varying from 2 to 6 per h.p.f., with occasional red cells from 1 to 2 per h.p.f. and an occasional small granular hyaline cast ranging as high as eight hyaline casts per h.p.f.

One routine stool showed a 4+ benzidine on this second admission but two other stools were negative for the benzidine test, and otherwise negative.

The routine blood counts showed the hemoglobin to be 14 grams or 90%, with 4,500,000 reds, 8,600 white cells and a differential count with a slight shift to the left, but no abnormal cells. Later the hemoglobin dropped to 12 grams with a red count of 4,200,000 and a white count of 13,000 with no essential change otherwise.

The blood urea was registered at 28 mgm./100 cc. on admission, went up gradually to 62 mgm./100 cc., later back to 48 mgm./100 cc., but finally up to 140 mgm./100 cc. on 7/4/50. The blood chlorides were consistently low at 77 mEq/liter. CO_2 combining power ranged from 37 mEq/liter down to 30 mEq/liter just before death. The urea clearance was 38.6% of normal and the intravenous phthalein showed 10% in the first fifteen minutes, 17% in thirty minutes and a total of 47% for the two hours.

Gastric analysis showed ample free hydrochloric and total acid and no other remarkable findings.

Bromsulphalein studies showed a trace remaining in the blood in 45 minutes. Thymol turbidity test showed 1.8 thymol turbidity units. The serum lipase was 1.8 cc. N/20 NaOH/1 cc. serum on two occasions and on 6/29/50 the amylase was 76 mgm./100 cc. but on 6/30/50 it was 18 mgm./100 cc. The icterus index was 6, the total protein 5.5% with a normal A/G ratio. Fasting blood sugar 118 mgm./100 cc.

The bone marrow was studied carefully and considered to be within the normal range. Various bacteriological studies and agglutination tests were done. Widal was negative for B. typhosus and paratyphosus A. and B. Agglutinations for several strains of dysentery were negative and agglutinations for B. abortus, B. suis and B. tularense were all negative. A number of cultures of catheterized urine were obtained and B. coli was recovered on two occasions. Seven blood cultures taken at intervals between 6/18/50 and 7/5/50 were all negative. The Wassermann and Kahn were negative. Tuberculin tests were negative.

The spinal fluid was negative, with a zero cell count and a total protein of 45 mgm./100 cc.

Electrocardiograms were again taken and were essentially the same, although a slight increase in QRS aberration had occurred, but this was not considered remarkable.

A number of X-ray studies were attempted and the intravenous pyelogram was normal, showing normal kidney pelves, normal ureters, and no abnormality of the bladder shadow.

X-ray examination of the chest showed some slight fibrosis of the lungs which was considered nonspecific. There was nothing remarkable in the lung fields. There was a moderate amount of old calcification within the hilar regions. The heart appeared to be normal.

A barium enema studied under fluoroscopic control with pre- and post-evacuation and air insufflation studies failed to show any abnormality in the colon.

The patient was quite ill this time and it was difficult to do a second G. I. X-ray, but a food-barium meal was given and a single film made after five hours without fluoroscopy. The stomach was seen to contain only a tiny trace of the barium and it was concluded that there was no evidence of gastric retention.

X-rays of the skull were essentially normal for age.

On the second admission the patient weighed 116 pounds and gradually came down to 110 pounds the day before her death.

This patient's course was progressively down hill with fever, anorexia, nausea and vomiting with marked apathy and low blood chlorides. An attempt was made to correct the latter situation on a number of occasions, but she continued to go downhill and died on the eighteenth day of her second admission to the hospital.

Note. Discussion of these cases will appear in the Monthly after the meeting of the Medical Society of Virginia.

New Ulcer Drug Seen as Preventive of Surgery.

Most persons with serious disability from peptic ulcer can avoid surgery by receiving treatment with a new ulcer drug, banthine (trade name), early tests with one series of patients indicate. The synthetic compound, which is taken in tablet form, blocks the impulses of the nervous system which stimulate overactivity and overacidity of the stomach. It is available only on prescription by a physician and must be taken under medical supervision.

Clinical trial of banthine in 100 peptic ulcer patients is described by Drs. Keith S. Grimson, C. Keith Lyons and Robert J. Reeves of Duke University School of Medicine, Durham, N. C. (*J. A. M. A.*)

Of this group of patients, 62 were considered to have "conventional indications for surgery" before treatment with banthine was begun. Surgery was performed on five because of development of scar tissue or other special indications.

"Most of the patients were limiting their activity, restricting diet and using antacids [substances which counteract acids] before their trial of banthine," the doctors say.

"During treatment they were advised to discontinue use of antacids. With few exceptions, they were encouraged gradually to return to work and resume a normal diet during the first week or two of treatment.

"With the exception of two patients, the group has continued regular work or, if originally incapacitated, has returned to regular work. Pain of ulcer usually is relieved completely before healing can occur.

"It is much better that peptic ulcer when possible should be treated medically. It is our present opinion that banthine is a medical treatment better than that heretofore available and that need for surgery has and will decrease. Perhaps scar tissue can be avoided by prophylactic use of a simple treatment such as banthine. However, obstruction already present to a pronounced degree may lead to failure of banthine therapy and need for surgical intervention.

"Results with banthine used in lieu of rest, restriction of diet or antacids or other medicaments have been gratifying. Elimination of conventional restrictions and medical treatments necessary for study purposes, however, is not necessarily recommended as a good general practice. Occasionally because of delay of relief of pain or recurrence of pain banthine treatment has been supplemented."

Presidents of the Medical Society of Virginia

President	Year of Meeting
*Dr. James McClurg, Richmond	1821
*Dr. William Foushee, Richmond	1822
*Dr. William Foushee, Richmond	1823
*Dr. James Henderson, Richmond	1824
Meetings Discontinued.	
*Dr. Robert William Haxall, Richmond	1841
*Dr. Robert William Haxall, Richmond	1842
*Dr. Frederick Marx, Richmond	1843
*Dr. Thomas Nelson, Richmond	1844
*Dr. William A. Patteson, Richmond	1845
*Dr. William A. Patteson, Richmond	1846
*Dr. John A. Cunningham, Richmond	1847
*Dr. William A. Patteson, Richmond	1848
	1849
*Dr. Robert William Haxall, Richmond	1850
*Dr. Beverley R. Wellford, Fredericksburg	1851
*Dr. James Beale, Richmond	1852
*Dr. Thomas P. Atkinson, Danville	1853
*Dr. Carter P. Johnson, Richmond	1854
*Dr. H. C. Worsham, Dinwiddie	1855
*Dr. H. C. Worsham, Dinwiddie	1856
*Dr. James Bolton, Richmond	1857
*Dr. Levin S. Joynes, Richmond	1858
Meetings Discontinued	
*Dr. R. S. Payne, Lynchburg	1870
*Dr. R. S. Payne, Lynchburg	1871
*Dr. A. M. Fauntleroy, Staunton	1872
*Dr. Harvey Black, Blacksburg	1873
*Dr. A. G. Tebault, London Bridge	1874
*Dr. S. C. Gleaves, Wytheville	1875
*Dr. F. D. Cunningham, Richmond	1876
*Dr. J. L. Cabell, University	1877
*Dr. J. H. Claiborne, Petersburg	1878
*Dr. L. S. Joynes, Richmond	1879
*Dr. Henry Latham, Lynchburg	1880
*Dr. Hunter McGuire, Richmond	1881
*Dr. G. W. Semple, Hampton	1882
*Dr. W. D. Cooper, Morrisville	1883
*Dr. J. E. Chancellor, Charlottesville	1884
*Dr. S. K. Jackson, Norfolk	1885
*Dr. Rawley W. Martin, Chatham	1886
*Dr. Bedford Brown, Alexandria	1887
*Dr. Benjamin Blackford, Lynchburg	1888
*Dr. E. W. Row, Orange C. H.	1889
*Dr. Oscar Wiley, Salem	1890
*Dr. W. W. Parker, Richmond	1891
*Dr. H. Grey Latham, Lynchburg	1892
*Dr. Herbert M. Nash, Norfolk	1893
*Dr. Wm. P. McGuire, Winchester	1894
*Dr. Robt. J. Preston, Abingdon	1895
*Dr. Wm. L. Robinson, Danville	1896
*Dr. Geo. Ben Johnston, Richmond	1897
*Dr. Lewis E. Harvie, Danville	1898
*Dr. Jacob Michaux, Richmond	1899
*Dr. Hugh T. Nelson, Charlottesville	1900
*Dr. J. R. Gildersleeve, Tazewell	1901
*Dr. R. S. Martin, Stuart	1902
*Dr. J. N. Upshur, Richmond	1903
*Dr. Joseph A. Gale, Roanoke	1904
*Dr. Wm. S. Christian, Urbanna	1905
Dr. Lomax Gwathmey, Norfolk	1906
*Dr. Paul B. Barringer, Charlottesville	1907
*Dr. Wm. F. Drewry, Petersburg	1908
*Dr. Stuart McGuire, Richmond	1909
*Dr. E. T. Brady, Abingdon	1910
*Dr. O. C. Wright, Jarratt	1911
*Dr. Hugh M. Taylor, Richmond	1912
*Dr. Southgate Leigh, Norfolk	1913
*Dr. Stephen Harnsberger, Catlett	1914
*Dr. Samuel Lile, Lynchburg	1915
*Dr. Joseph A. White, Richmond	1916
*Dr. Geo. A. Stover, South Boston	1917
*Dr. Ennion G. Williams, Richmond	1918†
*Dr. Ennion G. Williams, Richmond	1919
*Dr. Paulus A. Irving, Farmville	1920
*Dr. Alfred L. Gray, Richmond	1921
*Dr. E. C. S. Taliaferro, Norfolk	1922
*Dr. John Staige Davis, University	1923
*Dr. W. W. Chaffin, Pulaski	1924
*Dr. Hunter H. McGuire, Winchester	1925
Dr. W. L. Harris, Norfolk	1926
*Dr. J. Shelton Horsley, Richmond	1927
*Dr. J. W. Preston, Roanoke	1928
*Dr. J. Bolling Jones, Petersburg	1929
*Dr. Charles R. Grandy, Norfolk	1930
*Dr. J. Allison Hodges, Richmond	1931
*Dr. I. C. Harrison, Danville	1932
*Dr. J. C. Flippin, University	1933
Dr. R. D. Bates, Newtown	1934
*Dr. F. H. Smith, Abingdon	1935
Dr. P. St. L. Moncure, Norfolk	1936
Dr. J. M. Hutcheson, Richmond	1937
*Dr. G. F. Simpson, Purcellville	1938
Dr. A. F. Robertson, Jr., Staunton	1939
*Dr. H. H. Trout, Roanoke	1940
Dr. W. B. Martin, Norfolk	1941
*Dr. Roshier W. Miller, Richmond	1942
Dr. J. M. Emmett, Clifton Forge	1943
*Dr. C. B. Bowyer, Stonega	1944
Dr. H. B. Mulholland, Charlottesville	1945
*Dr. Julian L. Rawls, Norfolk	1946
Dr. W. L. Powell, Roanoke	1947
Dr. Guy R. Fisher, Staunton	1948
Dr. M. Pierce Rucker, Richmond	1949
Dr. W. C. Caudill, Pearisburg	1950

*Deceased.

†Owing to influenza epidemic during World War I, the council met in 1918, and Dr. Williams was continued as President.

PUBLIC HEALTH

L. J. Roper, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for August 1950 as compared with the same month in 1949, and for the period of January through August 1950 as compared with the same period in 1949, is as follows:

	Aug. 1950	Aug. 1949	Jan.-Aug. 1950	Jan.-Aug. 1949
Typhoid and paratyphoid	16	20	57	90
Diarrhea and dysentery	524	1,407	2,702	3,918
Measles	84	136	2,476	21,237
Scarlet fever	32	24	619	456
Diphtheria	5	9	102	92
Poliomyelitis	312	111	547	163
Meningitis	6	11	93	66
Brucellosis	4	4	40	43
Rocky Mountain spotted fever	21	27	58	86
Tularemia	4	6	25	25

Observations on the 1950 Poliomyelitis Outbreak in Virginia

In this year of high incidence of poliomyelitis in Virginia, certain features of the outbreak are repeated which occurred in other years of high incidence. When a pattern recurs with regularity, it is assumed that chance is eliminated, and it is concluded that this particular pattern has significance. So far this significance has eluded students of the epidemiology of the disease. This recurring pattern relates to seasonal occurrence and to sex—race distribution of reported cases.

In regard to seasonal incidence, the peak of reported cases this year occurred the week ending August 12, with 94 cases reported. Succeeding weeks have shown 68, 67, and last week (Sept. 2) 48 cases. There are no clear cut reasons for this regularly repeated pattern of seasonal incidence. However, two theories have been advanced:

1. That hot weather activates the virus.
2. That hot weather lowers resistance of individuals attacked.

As regards the method of spread of poliomyelitis, most workers today accept the person to person theory as the most probable means of spread, though it is not possible with present day knowledge, to rule out other means of spread.

Another repeating pattern is the higher ratio of males attacked, over females. This is shown in Table I for recent years of highest incidence.

Table I

Year	Cases Reported	Percentage Males	Percentage Females
1944	826	52.8	47.2
1948	567	57.8	42.2
1950 (to Sept. 7)	597	57.6	42.4

It may well be that infection is no more common in males than in females, but that evidence of disease, such as paralysis, occurs more often in active males because they are less apt to call attention to mild illness, and be put to bed, than are females and less robust males. It has also been repeatedly observed that severe physical activity at the onset of an illness which may prove to be poliomyelitis is highly dangerous, as evidenced by the occurrence of paralysis following such activity. The husky male is the one who engages in such activity. The case of Franklin D. Roosevelt is cited in this connection.

The third parallelism observed in years of high incidence is the predominance of white over colored. Attack rates for white and colored are shown in Table II.

Table II

		Cases Reported	Attack Rate (per 100,000 pop.)
1944	White	674	31.7
	Colored	72	10.6
1948	White	511	21.0
	Colored	54	7.6
1950 (to Sept. 7)	White	530	21.8
	Colored	77	10.8

A possible explanation of the persistently lower attack rate reported for colored may be that mild subclinical cases of poliomyelitis in whites are more apt to be seen by a physician and be reported than are similar cases among colored.

Recently a possible correlation has been observed between inoculations performed several weeks prior to the onset of poliomyelitis and the site of paralysis. Results of an investigation by Hill and Knowelden, of the London School of Hygiene and Tropical Medicine, are reported in the *British Medical Journal*, July 1, 1950. Since their findings have been challenged on statistical grounds, the U. S. Public Health Service is accumulating evidence from other sources. Until the evidence is all in, it has seemed wise to advise the limitation of inoculation and immunization procedures during the poliomyelitis season, just as it is recommended that mouth and throat operations be avoided during high incidence years.

MEDICAL SOCIETY OF VIRGINIA

MEDICAL SERVICE COMMITTEE

Veteran Medical Care by Civilian Physicians

There are now in the United States over 19,000,000 veterans. It is estimated that 85 per cent of veterans under medical care have non-service connected disabilities. Almost everyone will agree that veterans with service connected illness or injury should receive complete and maximum care from veterans facilities. On the other hand, why should veterans with non-service connected short term illness not be cared for as any other civilian when the local facilities are available? It has become a common practice for any veteran regardless of his illness or of his financial status who desires care by a veterans hospital to sign a statement that he is unable to pay and to be admitted to the veterans hospital without any questions being asked or any investigation being made.

The number of veterans is steadily increasing. Medical care by the Federal Government is no different from other government projects in that the cost is much greater than the same care and service rendered on a private basis. The same illness which may keep a private patient hospitalized one week is likely to keep a patient in a veterans hospital three weeks. In the name of economy, then, local facilities should be used whenever available for veterans with non-service connected disabilities. If only veterans with service connected illnesses and perhaps those with certain long term disease were treated by the Federal Government it should become unnecessary to continue the construction of veterans hospitals on the present costly scale.

With regard to the present system of ambulatory treatment of veterans with service connected illness by local physicians, the theory is commendable but there are many details which should be revised. Every physician who has had duty in the armed forces knows that there will always be a plethora of paper work and red tape where the Federal Government is concerned but it does seem unnecessary for the forms to require whether phenobarbital was given in one-fourth grain doses four times a day or one-half grain doses twice a day. Otherwise, the forms may be returned marked "exact dosage?" Another weakness in the present system is that of requiring authorization beforehand for each patient visit. It may be that at the patient's first visit he will be found to have a condition which, though not an emergency, should have prompt treatment at frequent visits. At present, the alternative is to have the patient wait until authorization for additional visits can be obtained; or to treat the patient and take the chance of not having the request for authorization for additional treatments approved. Many busy practitioners are unwilling to treat any veterans under the present system because of the time consumed in paper work. This sometimes deprives the veteran of the physician of his choice unless he is willing to pay the fee himself.

It would seem that a plan could be devised whereby a physician might render treatment and services he considered necessary for a veteran patient and at stated intervals make a report—in triplicate, if necessary—and also remit a bill itemized according to a stated scale. This would put the authority to treat a veteran patient in the hands of the local physician where it belongs, and not in the hands of some distant secretary where it now is. Perhaps such a system would occasionally be abused, but the instances would likely be rare and the system would be much more flexible than the present one.

SNOWDEN C. HALL, JR., M.D.,
Danville, Virginia

MENTAL HEALTH

Joseph E. Barrett, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Occupational and Recreational Therapy in Our State Mental Hospitals.

One hundred years ago Dr. John M. Galt, superintendent of the institution then known as "Eastern Lunatic Asylum", advocated occupation, recreation, music, lectures and reading to "prevent the insane from lapsing into the dull torpor of reveries and indolence into which it is the very nature of man to sink if mind and body alike are left in a state of vacuity from want of means to occupy them". Since then such therapy sometimes has been neglected in the institutions maintained by the Commonwealth. The program being carried on today should be of interest to physicians who prescribe care in State institutions for some of their patients.

The rationale of this therapy is that activity favors the restoration of function. In mental medicine the psychic function is given more emphasis than the physical. However, we certainly cannot consider one to the exclusion of the other. Since the pathology is in the field of inter-personal relationships, group activities are more useful in this particular therapy.

Our philosophy is that recreation and occupation cannot be separately considered. A judicious mixture of work and play should be prescribed by a physician and carried out by therapists with sound psychiatric orientation. In our State hospitals the work is directed by professional personnel but we use other employees and often patients whenever it seems advisable. Although a completely integrated program is carried on, it is convenient to discuss it separately under occupation, recreation, and industry.

In the occupational field there is the usual range of arts and crafts such as sewing and needlework, woodwork, weaving, ceramics, painting, wood carving, and so on. The approach depends upon the type of patient, the duration and severity of his illness, and the prognosis. In the new patient it is, in the beginning, tentative and exploratory. An effort is made to develop an interest on the part of the patient in some activity which after his release from treatment can be a hobby or even a new occupation. If he is depressed or withdrawn the desirable medium is one which is stimulating and leads into group activity. If the patient is overactive, aggressive or morbidly elated a non-stimulating medium is selected in which contact with a group is limited. If the patient's occupation has been an irritating factor something else or something similar but more satisfying is selected. Another basic consideration is that the activity, of whatever nature, must make sense to the patient. It is not necessary that anything of value be produced, but meaningless work is pernicious and destructive in its effect on the patient. The late Dr. C. C. Burlingame, of the Hartford Institute of Living, told of a well-to-do banker with a depression who was put to weaving baskets and promptly attempted suicide, with the bitter comment that if he was only good for weaving baskets he might as well die.

With patients classified as chronically ill the emphasis is placed on re-socialization with the first goal being an effort to draw the patient into the hospital society and to establish more normal habits. These chronic patients are frequently our therapeutic failures. However, if these patients are left without any attention they become onerous problems of nursing and housekeeping care. Hence, the aim of the therapist is to aid them enough in their contact with reality so that they can care for their personal needs. Stimulating group activities prove most effective in these cases.

Almost a third of our State hospital admissions are from the older age group. Such patients seldom recover, or even improve to the point where they can re-adjust. The efforts of the therapist are to make their hospital adaptation as comfortable as possible, to prevent further regression and to maintain personal self-care as far as possible. Occasionally an old person is sufficiently well preserved physically to return to productive life if the psychological factors are properly evaluated and treated. If the patient can be given a feeling of usefulness, of being loved and wanted, of still being able to make a contribution to the economy and the society in which he is placed, the results are sometimes surprising. The activities for this group are selected with due regard for physical limitations; they should not be

too new to the individual and must be obviously useful.

There are special groups of patients who require modifications of our program. In patients undergoing insulin or electroshock therapy we take into consideration the restrictions and special hazards which complicate that therapy. Insulin patients must be kept under constant observation and precautions must be taken against secondary hypoglycemia. Electroshock patients have disturbances of memory and require constant reassurance and the therapist must not expect their intake and recall to be normal. In children (of whom we have a few) the therapy is built around a school program.

Recreational therapy consists mainly of group activities, with the goal being resocialization. Some individual work is carried out, just as in occupational therapy. In addition to the usual program of sports, moving picture shows, dances, bingo and card parties we carry on some less usual activities, such as afternoon teas, bus rides to historical points of interest and television shows.

Industrial therapy is the natural extension of occupational therapy. No individual is entirely healthy unless through his efforts he contributes to his support and to the welfare of the group. Hence, every patient is expected to contribute to the maintenance of the institution. Patients take part in housekeeping, in the food service, in the work of the farm and dairy, in the laundry, storeroom, mail room, office, etc. Usually a person is assigned to work in keeping with his previous occupation and training. Here, as in the other aspects of the program, therapeutic implications are kept foremost.

The following case from one of our State hospitals illustrates several of the points mentioned. The initial approach was on a purely individual basis. The patient was led naturally into socialized activities by first using another patient, and then a group. The means used was not one of the traditional crafts, and in the end it developed into a type of industrial assignment.

The physician's prescription after a month's observation read: "Get this patient out of bed and active. Interest her in using her hands and in walking. There are no complications other than the fact that she has been bedfast for a year prior to admission. Age 32." She lay in bed completely covered except for her pinched face and claw-like hands. The eyelids were closed, but at every sudden noise they twitched. The only sound was a light whimpering. She repudiated human needs, and food and conversation were both ignored.

The therapist introduced herself and stated that the doctor now felt that the patient was ready for some activity. With a very brief explanation of what was offered in the occupational therapy department the therapist left some magazines for the patient. No response was needed and the only one evoked was a wince. For a week various magazines and some knitting of very light weight, colorful yarn were left in the patient's room. The latter was ignored. The magazines were merely riffled. On Friday she was told that the therapist would come on Monday morning and the patient would be expected to be ready to go with her to the occupational therapy shop.

On Monday the patient remained in bed. Along with the ward personnel she was taken out and dressed. As she left with the group each step seemed that of a crippled invalid wracked with frightful pain. The therapist suggested, "Since you must attend these meetings you might select the type of activity which interests you", and named the crafts available. The first normal response was, "I've always wanted to learn to draw." During the seating of the group the patient refused a chair, remained backed into a corner, knees partially flexed, shoulders hunched, arms drawn up and hands curled, shielding her mouth and throat.

Materials for finger painting were assembled, the elementary techniques of the craft were explained on the basis that until the fingers and hands were relaxed drawing would be ineffectual. The first painting was a series of narrow gauge scratches made by the edges of the fingernails, using a bright red paint. A second painting was suggested and the patient selected a dull brown paint.

Her technique improved and some quite broad areas were done by the flat of her hands. To establish good work habits, the cleaning up process was explained to the patient. She picked up the bowl of water, contemplated her work and remarked, "Well, I still don't think that's much of a drawing, but I feel better."

The second day she went immediately to her work space and in the 85-minute work period did two paintings, both in a dull brown. Each was a line of

dancing figures in a rhythmic curving arrangement suggestive of music.

On the basis of these paintings the therapist began talking of music with no response from the patient. The choir held a service on the patient's ward and the patient was observed closely. At a sour note, the patient flinched. Conversation about favorite music, addressed to other patients, drew her into a discussion of the piano as a means of expression. Mildly humorous stories about learning to play elicited a faint smile. A casual remark, while hanging her painting, that piano playing was excellent exercise for tense hands brought forth the plaintive remark, "I used to like to play." It was suggested she try a brief period of playing to vary her work with finger paints, to hasten the relaxation of tense muscles.

After several weeks of this program the patient was asked to play for a small group of patients but refused because she felt unready. Other natural and manufactured openings met with the same fate when requested by the therapist.

Another patient who was studying voice needed an accompanist. It was suggested that she ask the pianist to work with her and this became a regular part of the patient's activity. When later the vocalist, who enjoys performing, was invited to sing at a tea, it followed that our patient would accompany her. Her success and the approbation received supplied impetus toward more activity alone and with others. The patient needed no more suggestion, she was ready and able to assume control of her life.

BOOK ANNOUNCEMENTS

Cerebral Palsy. By JOHN F. POHL, M.D., Orthopedic Surgeon, Michael Dowling School for Crippled Children, Minneapolis, Minnesota. Bruce Publishing Company, Saint Paul, Minn. 1950. xii-224 pages. Cloth. Price $5.00.

The Management of Obstetric Difficulties. By PAUL TITUS, M.D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Secretary of the American Board of Obstetrics and Gynecology; etc. Fourth Edition. The C. V. Mosby Company, St. Louis. 1950. xvi-1046 pages. With 446 Illustrations and 9 Color Plates. Cloth. Price $14.00.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association. With the comments that have appeared in the Journal of the American Medical Association. 1949. Philadelphia, J. B. Lippincott Company. 231 pages. Cloth.

New and Nonofficial Remedies. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1950. Issued Under the Direction and Supervision of The Council on Pharmacy and Chemistry of the American Medical Association. 1950. Philadelphia, J. B. Lippincott Company. 800 pages. Cloth.

Sir William Osler. Aphorisms from His Beside Teachings and Writings. Collected by Robert Bennett Bean, M.D. (1874-1944). Edited by William Bennett Bean, M.D. Henry Schuman, Inc., New York, 1950. 159 pages. Cloth. Price $2.50.

Immortal Magyar. Semmelweis, Conqueror of Childbed Fever. By FRANK G. SLAUGHTER, M.D. Henry Schuman, Inc., New York, 1950. 211 pages. Cloth. Price $3.50.

Cancer of the Colon and Rectum. Its Diagnosis and Treatment. By FRED W. RANKIN, B.A., M.A., M.D., LL.D., Sc.D., F.A.C.S., Surgeon, St. Joseph's and Good Samaritan Hospitals, Lexington, Kentucky; Clinical Professor of Surgery, University of Louisville. And A. STEPHENS GRAHAM, M.D., M.S. (in Surgery), F.A.C.S., Surgeon, Stuart Circle Hospital, Richmond, Virginia; Associate Professor of Surgery, Medical College of Virginia. Second Edition. Charles C. Thomas, Springfield, Ill. 1950. xiii-427 pages. Illustrated. Cloth.

Eyes and Industry. Formerly Industrial Ophthalmology. By HEDWIG S. KUHN, Hammond, Indiana. Second Edition. St. Louis, The C. V. Mosby Company. 1950. 378 pages. Illustrated. Cloth. Price $8.50.

Freud: Dictionary of Psychoanalysis. Edited by NANDOR FODOR, Associate of the Association for the Advancement of Psychotherapy. And Frank Gaynor, Co-Author of the "Dictionary of Industrial Psychology". With a Preface by Theodor Reik. Philosophical Library, New York. 1950. xii-208 pages. Cloth. Price $10.00.

Atlas of Roentgenographic Positions. By VINITA MERRILL. While Education Director, Picker X-Ray Corporation. In Two Volumes. St. Louis, The C. V. Mosby Company. 1949. 663 pages. Illustrated. Cloth. Price $30.00.

The bibliography alone makes this the most practical reference book for X-ray technicians and radiologists. Many roentgenographic positions and procedures, the unusual or specialized positions not used as part of a routine examination and not ordinarily included in most simplified textbooks are included in these two excellent volumes.

Each procedure is illustrated and described briefly and clearly. The drawings, radiographs and photographs are all worth while.

Every radiologist and x-ray department should own this work.

F. B. Mandeville

EDITORIAL

Joseph Price (1853-1911)

JOSEPH PRICE was born January 1, 1853 in Rockingham County, Virginia, the son of Joshua and Phoebe Moore Price. He died in Philadelphia, June 6, 1911, strangely enough of peritonitis, a disease he had done so much to conquer. He received his early schooling at Fort Edwards, New York, and at Union College, and graduated in medicine at the University of Pennsylvania in 1877. His brother, Mordecai, who was eight years his senior, and who had an established practice in Philadelphia, paid for his education. Later Dr. Joe taught Dr. Mordecai all that he knew about surgery, a relationship reminding one of John and William Hunter. There was a similar difference in the dispositions of the two sets of brothers but the Price brothers did not fall out with each other. Joe Price was fond of athletics and outdoor sports. He was a boxer of ability and the best rifle shot in America, winning the championship at the Centennial World's Fair in 1876. Upon his graduation he was offered $3,500.00 to play professional baseball. However, he went to work in the Philadelphia Dispensary, the oldest free dispensary in America, where he organized the gynecological and obstetrical department. Later he was in charge of the Preston Retreat for eight years but he kept his connection with the Philadelphia Dispensary all his life.

His first abdominal operation was performed in the slums of Philadelphia in 1878. He had been sent by the coroner to do an autopsy as the patient was supposed to have died from a criminal abortion. The patient was not dead but was critically ill with peritonitis. He opened the abdomen and inserted a coffer dam of gauze and the patient recovered. This operating in the home was not so strange as it sounds today for much of the surgery of the time was done in the home. Price's simple but meticulous technic was especially adapted to such practice. He used few instruments, which he boiled, along with towels for drapes and he relied on copious soap and water for his hands. His sutures were mass sutures of silk worm gut. Even in his private hospital he boasted of his four dollar operating room. Nothing in it cost more than that amount. He emphasized cleanliness and essentials and frowned on frills. He maintained that a knowledge of obstetrics was essential to good gynecological surgery.

Lawson Tait has been called the Father of British Gynecology and Joseph Price, the American Tait. Both greatly enlarged the field of gynecological operations, particularly in inflammatory lesions and ectopic pregnancy, and the vaginal hysterectomy. In many ways they were much alike. Both were wondrously skilful, bold and courageous. Both loved controversy and both had a gift of making enemies. Here the parallel ends. Tait made enemies, apparently, because he liked to do so; Price did so entirely impersonally and only in sustaining his surgical principles. Many of those he most bitterly attacked remained his best friends. Tait was an excellent business man. Price cared nothing about money, and never mentioned dollars and cents in his conversation. His brusqueness in medical debate was in great contrast to his kindness and gentleness in his dealings with his patients, especially his charity patients. He saw to it that even the poorest colored woman in his private hospital had a special nurse for 48 hours after an operation. She was not to be left alone under any circumstances. The superintendent of his hospital had standing orders to find a place for an emergency patient even if she herself had to give up her own room and go to a hotel. His private life was above reproach.

However, what the public has to thank Joe Price for the most is his teaching. Al-

though he was never connected with a teaching institution he taught more gynecology and surgery than anyone in his time. McMurtrey, in his presidential address to the American Medical Association, said: "There are few prominent operators in America who do not in some way show the handiwork of Doctor Joseph Price." Visiting surgeons, from all over the country and from abroad, came to see him operate. Will Mayo tells how his own mortality in Rochester dropped 12 per cent in his ovarian surgery after visiting with Price for three weeks. He further said that the three men to whom the world was most indebted in abdominal surgery were Price of America, Pean of France, and Tait of England. Dr. Howard Kelly wrote "Dr. Price was a pioneer in the newer aggressive surgery, and a great leader and teacher of other men. He did more than any man I know to fashion the methods we practice today. He realized that infection was mainly to be avoided through strict cleanliness and became an apostle of asepsis as contrasted with antisepsis. He was brilliant as an operator, achieving the greatest results by the simplest methods. He was a warm, true, devoted friend and a most charming, racy conversationalist. Simple and unpretentious, he hated all sorts of shams. I have never known a man in our generous optimistic profession to be kinder to the poor, irrespective of race. Of Virginia stock with a background of tradition of the plantation, his heart ever went out to the colored woman under his care."

This is the 16th of a series of "Doctors for whom the public should be thankful."

Doctors Needed in Korea

THERE has been much unfavorable comment in the newspapers and lay journals about the slowness with which doctors are volunteering for service in the present "war". The public seems to be surprised particularly at the lack of enthusiasm of those V-12 and ASTP men who received their medical education at the hands of the government and who have had no compensatory military service. This is so contrary to the behavior of medical men in past wars that the public cannot understand it.

Many explanations have been suggested. One is that this is not a war but a police action of the United Nations and is no business of the United States itself. Another is that the operations are on the other side of the earth and that this country is in no danger of being invaded. This, of course, is open to question. Be that as it may, and call the Korean situation by whatever name you please, the fact remains that our boys are being killed and wounded. They need medical attention. A third explanation that has been suggested is that the U.S. Army has a medical pool of 29,000 doctors in the reserves which has not been touched and also has enough doctors to attend the wives and children of the enlisted men.

A fourth explanation may be the blighting effect of Federal control. May it not be a foretaste of Federalized medicine? The Federal Government bought and paid for the medical services of these young men. When the Federal Government buys and pays for anything it takes the very spirit out of it. We hope we are wrong about this, for our fighting men must have the medical support they have always had and which they have every right to expect.

J. Bolling Jones, M.D., (1871-1950)

THE most colorful past-president of the Medical Society of Virginia died in a Richmond Hospital, Friday, September 1, 1950, after an illness of several months. Dr. Bolling Jones was known and loved by doctors throughout Virginia. He was untiring in work for the Society and for years was a valuable member of the Legislative Committee. In 1928 he received the highest honor to which a Virginia doctor is eligible. He was elected President of the Medical Society of Virginia. In more recent years his report as Chairman of the Necrological Committee has been a feature of our annual meetings. With dignity but without undue solemnity he has reported the deaths of our fellows.

John Bolling Jones was born in Dinwiddie County February 27, 1871. He attended Sunnyside School in Dinwiddie County and Mount Hermon School in Massachusetts. In 1893 he graduated at the Medical College of Ohio (now the Medical Department of the University of Cincinnati). After serving as resident physician at the Good Samaritan Hospital in Cincinnati, he passed the Virginia State Board of Medical Examiners (1894) and located in Chesterfield County. Characteristically he took an interest in the county's affairs and was elected a member of the County Board of Health. In 1897 he moved to Petersburg where he became a leading citizen as well as its busiest practitioner. Among his many honors were presidency of the Petersburg Medical Faculty, the Dinwiddie County Medical Society, the Petersburg Hospital Staff and the Southside Virginia Medical Society. For years he was a member of the Medical Examining Board of Virginia. At every opportunity he attended medical meetings and frequently took part in the discussions—always with vigor and always in good humor, so much so that it was a pleasure to get into a discussion with him.

He was a member of the Tabb Street Presbyterian Church and was fond of long cigars and of fox hunting.

On July 7, 1896 Dr. Jones married Miss Janie Duckett of Clinton, S.C., who predeceased him in May. He is survived by four sons, four daughters, three sisters, two brothers, eighteen grandchildren and a great-grand child. Two of his sons, T. Duckett Jones and Herbert C. Jones and one daughter, Mrs. J. Randolph Perdue, are Doctors of Medicine.

We shall greatly miss our stimulating colleague. His like will not be seen again.

NEWS

The Roanoke Meeting.

A large gathering is expected at the meeting of the Medical Society of Virginia in Roanoke this month. Business sessions start on Sunday, the 8th, and, as an innovation, there will be a dinner meeting that evening for members of the House of Delegates.

The scientific program will commence Monday morning at 9:00 a.m. That afternoon there will be a Clinicopathological Conference, sponsored by the Medical College of Virginia and the Medical Department of the University of Virginia. The President, Dr. W. C. Caudill of Pearisburg, will speak that evening as will also two of his guests, U. S. Senator Harry Flood Byrd and Colonel William L. Wilson of Washington.

Tuesday afternoon, Dr. Franklin D. Murphy, another guest, will speak on Post-Graduate Education for the Practicing Physician, and that evening will be held the cocktail party, dinner and entertainment.

Reserved for the final session on Wednesday is a Symposium on Progress in Medicine, those taking part in this being Dr. George T. Pack (guest) of

New York City, Dr. William Parson of the University of Virginia, Dr. Russell L. Haden of Crozet (formerly with the Cleveland Clinic), and Dr. Harvey B. Haag of the Medical College of Virginia.

There will be excellent exhibits, both scientific and technical, and recess will be taken in each session to permit members to visit these. Moving pictures will also be shown at various hours, so there will be much to be both heard and seen. The hospitality of the Roanoke hosts is so well known that we feel all members who can will arrange to attend.

The Virginia Section of the Diabetes Association

Has arranged the following program for its meeting to be held in Roanoke, Sunday afternoon, October 8, at 3:00 p.m., preceding the meeting of the Medical Society of Virginia:

Program

I. Bronze Diabetes—Dr. William A. Read, Newport News.
II. Hyperglycemia Accompanying Cerebral Vascular Accidents—Dr. Edward D. Levy, Norfolk.
III. Hyperthyroidism Associated with Diabetes (Case Report)—Dr. Robert Crawford, Roanoke.
IV. Treatment of Diabetic Acidosis with Hypotonic Saline Instead of Normal Saline—Dr. Richard Neubauer, Richmond.
Discussion—Dr. H. St. George Tucker, Jr., Richmond.
V. Diabetes and Coronary Heart Disease—Dr. Ernest G. Scott, Lynchburg.

All members of the Medical Society of Virginia are invited to attend this meeting.

Albemarle County Medical Society.

In January, Dr. W. Roy Mason was elected president of this Society, Dr. George Cooper, Jr., vice-president, and Dr. Thomas S. Edwards was re-elected secretary-treasurer. Since then Dr. Mason has left the University of Virginia to be student physician at Emory University, Georgia, and Dr. Cooper has succeeded to the presidency for the balance of 1950.

The Southern Psychiatric Association

Will hold its annual meeting in Williamsburg, November 27 and 28, under the presidency of Dr. R. Finley Gayle of Richmond. Dr. Joseph E. Barrett of Williamsburg and Richmond is chairman of entertainment. Dr. Newdigate Owensby of Atlanta is secretary of the Association and Dr. R. Burke Suitt of Durham, N. C. is president-elect and will succeed to the presidency at the end of this meeting.

Postgraduate Courses.

The Council on Postgraduate Medical Education of the American College of Chest Physicians announces that it will sponsor two Postgraduate courses in Recent Advances in Diseases of the Chest. The first postgraduate course will be held at the St. Clair Hotel, Chicago, October 16-20, 1950, and the second course will be held at the Hotel New Yorker, New York City, November 13-18, 1950.

Tuition for each course is $50.00. Applications will be accepted in the order in which they are received as registration will be limited. Address all inquiries and applications to the Council on Postgraduate Medical Education, 500 North Dearborn Street, Chicago 10, Illinois.

Dr. Maurice M. Bray,

Recently at the University Hospital, Charlottesville, has moved to Suffolk and joined the staff of Lakeview Hospital.

The Neuropsychiatric Society of Virginia

Is meeting on October the 4th at Westbrook Sanatorium, Richmond, under the presidency of Dr. James K. Morrow of Radford. Dr. James B. Funkhouser of Richmond is secretary.

Dr. Joseph Hughes, Psychiatrist, Institute of Pennsylvania Hospital and Professor of Psychiatry, Women's Medical College of Pennsylvania, will be the guest speaker and his topic will be "Treatment of Anxiety States". It is also planned to have Dr. Joseph E. Barrett discuss the new commitment laws at this time. Members of the Society will be the guests of Westbrook Sanatorium.

Gill Hospital Spring Graduate Course.

At the twenty-fourth Annual Spring Graduate Congress to be held by Gill Memorial Hospital, Roanoke, April 2 to 7, 1951, some of the guest speakers include:

Dr. Edwin N. Broyles, Baltimore.
Dr. E. C. Kendall, Rochester, Minn.
Dr. Paul Holinger, Chicago.
Dr. John R. Lindsay, Chicago.
Dr. Lawrence Pool, New York.
Dr. D. H. Anthony, Memphis.
Dr. Robert H. Sinskey, Durham, N. C.

Dr. J. A. Sullivan, Ontario, Canada.
Dr. Robert H. Trueman, Philadelphia.
Dr. William P. McGuire, Winchester, Va.
Dr. Harold Scheie, Philadelphia.
Dr. R. W. Hollenhorst, Rochester, Minn.
Dr. Wendell Hughes, Hempstead, N. Y.
Dr. J. Gordon Cole, New York.
Dr. Harvey Thorpe, Pittsburgh.
Dr. Bryon Smith, New York.
Dr. A. D. Ruedemann, Detroit.
Dr. Edwin W. Burton, Charlottesville, Va.

Dr. Charles H. Peterson,

Roanoke, accompanied by Mrs. Peterson, attended the Sixth International Congress of Radiology in London in July and while away spent several weeks touring the British Isles.

On Staff of Memorial Guidance Clinic, Richmond.

Dr. William H. Kelly, director, has announced the appointment of Dr. Sidney Haber to the staff of the Memorial Guidance Clinic of Richmond. Upon leaving the Army three years ago, Dr. Haber became a resident psychiatrist at Menninger Foundation School of Psychiatry, Topeka, Kansas. During the past year, he spent most of his time at the Southard School for Problem Children.

Dr. Blackford Honored.

A portrait of the late Dr. Staige Davis Blackford, organizer and director of the Army's Eighth Evacuation Hospital Unit, was presented to the Medical Department of the University of Virginia during the recent reunion of the unit in Charlottesville.

Detecting Hidden Diabetes.

The Diabetes Detection Drive and Diabetes Week has been sponsored by the American Diabetes Association and is approved by the American Medical Association. It is planned as a public service with no public solicitation of funds. Diabetes Week last year was instrumental in detecting a number of unsuspected cases. With the cooperation of businesses and industries in this year's drive, many hidden diabetics among their employees can be discovered, treated, and retained on their jobs improved in health and working efficiency. Diabetes Week is scheduled for November 12-18. Help in this drive as far as possible.

Virginia Crusade for Freedom.

General Lucius D. Clay, national chairman of the Crusade For Freedom, has appointed General J. Fulmer Bright, medical director of the Virginia Industrial Commission, as Crusade Chairman for the State of Virginia. General Bright will head the Virginia organization to enroll Americans on Freedom Scrolls which will be permanently enshrined in the base of the 10-ton Freedom Bell to be hung in Berlin behind the Iron Curtain next October.

Dr. Bright, formerly a practicing physician of Richmond, has been quite active in the political life of this community for a number of years.

Radiological Society of North America.

The 36th annual meeting of the Society will be held in Chicago, December 10 through the 15th, under the presidency of Dr. Warren W. Furey, M.D. of Chicago. Headquarters will be the Palmer House in which all scientific and technical sessions will be held. Scientific exhibits are also to be displayed in the hotel. More than 60 papers as well as refresher courses feature the convention program.

Dr. Wendel G. Scott of St. Louis, Missouri, will present the annual Carmen Lecture. All members of the medical profession are welcome and invited.

Dr. Andrew K. Butler,

Recently radiologist at Riverside Hospital, Newport News, has moved to Wheeling, West Virginia, where he has accepted a similar position with the Ohio Valley General Hospital.

Dr. Thomas M. Scotti

Resigned his position as associate professor of Pathology at the Medical College of Virginia, Richmond, as of July 31, and accepted the position as pathologist in the Armed Forces Institute of Pathology at Washington, D. C. He is making his home in Falls Church.

Dr. D. Lane Elder

Has been renamed Mayor of Hopewell by the City Council at its reorganization meeting early in September. Dr. Elder has served on the Council for 31 years and has been Mayor for most of that time.

Essay Award, American College of Chest Physicians.

Dr. Eli H. Rubin, New York, Chairman of the Committee on College Essay of the American College of Chest Physicians, announced the winner of

the first award at the President's banquet in San Francisco, June 24, at the time of the 16th annual meeting of the College. The winner of the award of $250.00 was Dr. Henry A. Zimmerman of the Cardio-Vascular Laboratory, Cleveland City Hospital, Cleveland, Ohio, who is also a Fellow in the Department of Medicine at Western Reserve University. The title of his paper was "A Study of the Pulmonary Circulation in Man". This will be published in a future issue of Diseases of the Chest.

Dr. Joseph T. Phillips, Jr.,

Who has been practicing in Newport News, has moved to Welch, West Virginia, where he is connected with the Stevens Clinic Hospital.

Van Meter Prize Award.

The American Goiter Association again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association to be held in Columbus, Ohio, May 24, 25 and 26, 1951, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy in duplicate sent to the Corresponding Secretary, Dr. George C. Shivers, 100 East Saint Vrain Street, Colorado Springs, Colorado, not later than March 1, 1951. The committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

Dr. S. E. Hughes, Jr.,

Formerly of Danville, now of Lantana, Florida, has been appointed as assistant medical director of the Southeastern State Sanatorium near West Palm Beach.

New National Formulary IX Now Available.

The Council of the American Pharmaceutical Association has announced publication of the Ninth Edition of the National Formulary, which is one of the official compendia for drugs under the provisions of Federal State Food, Drug, and Cosmetic Laws. The book is published by the Mack Publishing Company in Easton, Pennsylvania, and is procurable through most wholesale drug houses.

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OBITUARIES

Dr. J. Bolling Jones,

Petersburg, a former president of the Medical Society of Virginia, died September 1. A notice on Dr. Jones appears in the editorial pages of this issue of the Monthly.

Dr. David M. Kipps,

Beloved physician and citizen of Front Royal and dean of Front Royal doctors, was stricken suddenly by coronary thrombosis and died August 17. He followed his accustomed duties the day before and entertained friends in his normal genial manner.

Dr. Kipps was graduated from the College of Physician's and Surgeons of Baltimore in March 1888, and began the practice of medicine in Wardensville, W. Va., later locating in Burlington, W. Va. He came to Front Royal in 1892 and had practiced in the town and in Warren County continuously until his death, a period of 58 years. Since 1932 he had been coroner for Warren County.

Dr. Kipps kept abreast of medical advances through the years, and was a member of the Medical Society of Virginia (of which he was a Life Member), the Medical Society of Northern Virginia and the Medical Society of the Valley of Virginia, and had served as President of the last two. He was on the medical staff of the Front Royal Community Hospital and Warren Memorial Hospital, Inc. Keenly interested in Civic affairs, Dr. Kipps was a member of the local Chamber of Commerce. He was a Lutheran since boyhood, and Charter member of Good Shepherd Lutheran Church of Front Royal.

He was born near New Market, Va., and was 84 years and 8 months old. Dr. Kipps was twice married, his first wife being Miss Susan Jane Trout of Ridgeville, West Virginia, who died fourteen years ago. A son, Edwin Trout Kipps survives. In December 1938, Dr. Kipps married Miss Lucy K. Laws of Front Royal, who survives him.

E. L. G.

Dr. Dudley Crofford Smith,

Charlottesville, died in a Washington hotel following a heart attack, while on his way to a convention in Philadelphia. He graduated from the University of Mississippi in 1914 and entered the University of Virginia Department of Medicine, from which he graduated in 1916, following which he joined the faculty of the medical school. He was professor of dermatology and syphilology and had taken a prominent place in this specialty, having served for sometime as chairman of the Venereal Disease Control Committee of the Medical Society of Virginia, and in June was named chairman of the section on this specialty of the American Medical Association. He had also been active in a number of other medical organizations and was a member and past president of the local Rotary Club. Dr. Smith was a native of Mississippi and fifty-seven years of age. Besides his mother, he is survived by his wife and two children.

Dr. George A. Renn,

For sixty years a practicing physician in Norfolk, died August 29, at the U. S. Marine Hospital in that city. A specialist in treating diseases of the eye, he was this year elected an honorary member of the Virginia Society of Ophthalmology and Otolaryngology. He was a native of Raleigh, N. C. and he received his degree in medicine from the New York University Medical School in 1889. He practiced for a time in New York before locating in Norfolk in 1903 after his return from duty with the Army in the Philippines. He was a member of the Norfolk County Medical Society and a Life member of the Medical Society of Virginia.

Dr. James N. Higginbotham,

For many years a well known physician of Tazewell County, died July 12, after a very protracted illness. His wife survives him. Dr. Higginbotham was sixty-eight years of age and a graduate of the Medical College of Virginia in 1906. He practiced for a number of years at Burkes Garden before moving to Tazewell. He was a member of the Medical Society of Virginia.

Dr. George W. Gay, Jr.,

Richmond, who became a Life member of the Medical Society of Virginia at its 1949 session, died August 27 at the age of 69. He was a native of Scotland Neck, N. C., and a graduate of the former University College of Medicine, Richmond, in 1899. He was a Mason and a member of Woodmen of the World. A nephew, Dr. George W. Gay, III, survives him.

Dr. Elmer Richard Moorman,

Who held the rank of commander in the medical branch of the Navy, died at his home at Kilmarnock, August 13. He was fifty-four years of age and a graduate of the Medical College of Virginia in 1930. He had practiced in Kilmarnock for a number of years before he entered the Navy in 1942 and was at that time a member of the Medical Society of Virginia. His wife and two daughters survive him.

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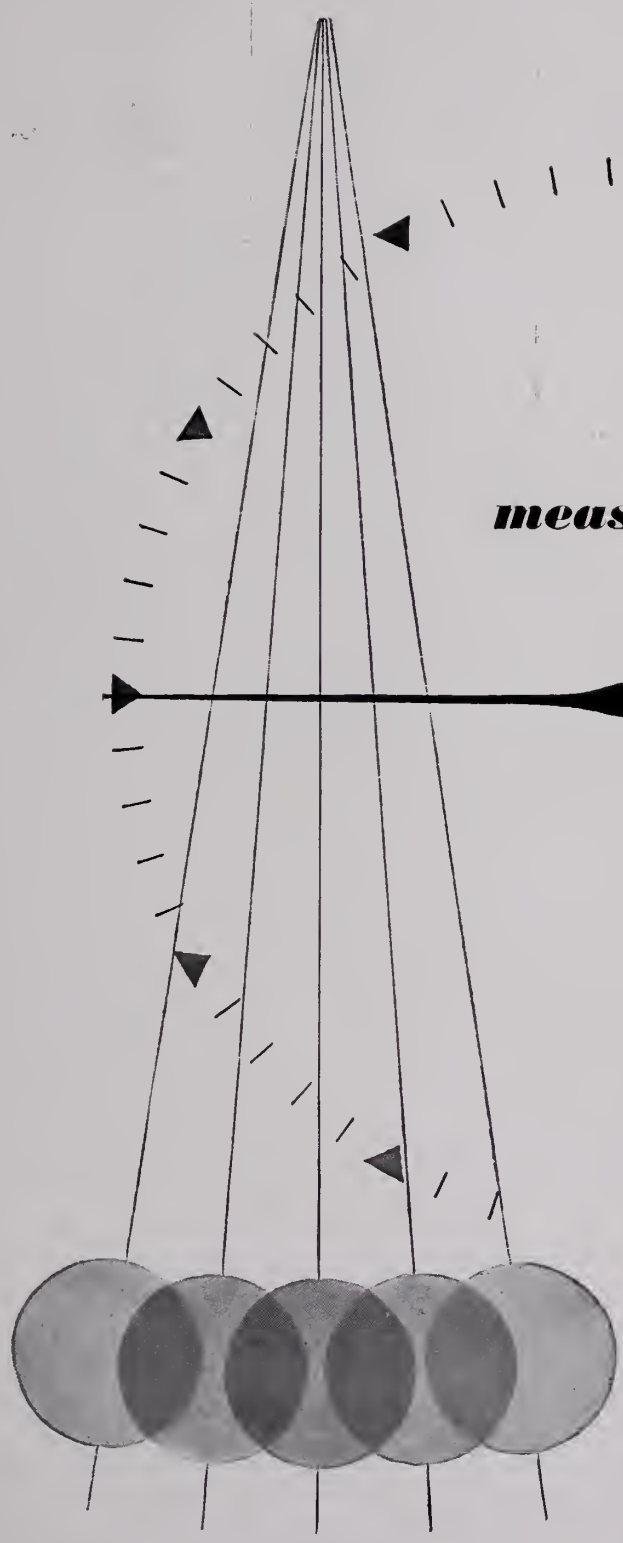

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WILLIAM HENRY WELCH ISSUE

November, 1950

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1. Nesbit, R. M., and Glickman, S. I.: J. Michigan State M. Soc. *46*:664, 1947.
2. Dodson, A. I.: West Virginia M.J. *45*:1, 1949.
3. Seneca, H.; Henderson, E., and Harvey, M.: J. Urol. *61*:1105, 1949.

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1. *Withering, W.:* An account of the Foxglove, London, 1785.
2. *Rimmerman, A. B.:* Digilanid and the Therapy of Congestive Heart Disease, Am. J. M. Sc. *209:* 33-41 (Jan.) 1945.

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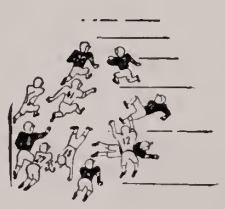

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Virginia Medical Monthly

Vol. 77, No. 11
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RICHMOND, VA., NOVEMBER, 1950

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GUEST EDITORIAL

COOPERATIVE EFFORTS BRING RESULTS

The Virginia Council on Health and Medical Care Links Organizations and Agencies

WE can all be proud of the progress which Virginia has made in the field of health and medical care during the past few years. The term ALL is used because it has been largely through the coordinated efforts, planning, and program of the Virginia Council on Health and Medical Care that much of this progress has been made possible. The Council's membership includes some 43 state-wide and 100 local organizations and agencies representing practically all the voluntary and official groups in the state interested in health. Through them it has awakened the public to its health needs, and has made the public health conscious.

The Medical Society of Virginia has played an important part in the Council's program since its formation in January of 1946. Following the startling facts revealed in the publication of reports by the Virginia Rural Health and Medical Care Survey Committee and the Virginia Advisory Legislative Council, Dr. H. B. Mulholland of the University of Virginia Medical School, then president of the Medical Society, was asked by the Virginia Tuberculosis Association to call together the official and voluntary health agencies in the state for the purpose of coordinating their programs. This was done and the Virginia Council on Health and Medical Care came into existence.

The Council does not attempt to absorb, direct, or control the programs of its highly specialized member organizations, or to establish a competitive health agency. Its purposes are to strengthen through united support a full health program for Virginia, serve as a clearing house on health and medical care problems and programs, assist in eliminating duplication and overlapping, when desirable, and bring statewide and local organizations and individuals together to facilitate joint planning. These purposes are not merely set down in the Council's constitution, but are actively pursued and have become a reality. To quote from a University of Virginia Extension Division Bulletin, "the Council has gone a long way toward proving that, through cooperation, agencies can strengthen a total program without sacrificing their own specialized interests. Indeed many agencies admit that they are stronger as individual units because of the pooling of efforts in areas of common interest."

As part of the Council's educational program, Public Opinion Reports are published when the need arises. These reports give brief, yet clear and concise information pointing out the accomplishments and the unmet needs in the health field. The reports are widely distributed by the member organizations of the Council so that they reach the "grass roots" in every section of the state. Not only is this educational material spread throughout our state, but requests for it come in from all parts of the United States, and even foreign countries. At a recent meeting of the National Health Council the

Virginia Council's published reports were pointed out as being the best example of what good educational material in this field should be like.

There has been a certain amount of interest shown on the part of communities in the state to form local health councils. The State Council has given help and encouragement to these councils when help has been requested. It is their stated policy, however, not to go out to organize councils, but rather to let the initiative for their organization come directly from local need and local enthusiasm.

From time to time the Council undertakes special projects which the membership agrees are worthy of consideration. Recently it set up a committee, under the chairmanship of Dr. W. C. Caudill, to study ways and means of making graduate medical education available to Negroes in AMA approved hospitals of the state, or gaining approval of hospitals where there are at present internships offered to Negroes. Another recent project was the undertaking of the work of the Virginia Health Committee of the Midcentury White House Conference on Children and Youth.

The most extensive and best known project of the Council was started late in 1948 by a committee of physicians, rural sociologists, professional and lay health workers, under the chairmanship of Mr. Henry S. Johnson, Executive Secretary-Treasurer, and Director of Public Relations for the State Medical Society. It was the purpose of this committee to determine the relative need for physicians in rural Virginia, to determine the availability of physicians to settle in Virginia, and to study the possibility of securing information from communities with regard to inducements they might give to have a physician locate in their community. As a continuing function of the committee's work, the Council is now acting as the clearing house for information on communities needing doctors and doctors who have written to the state expressing an interest in establishing their practice in Virginia. As of October 1, 1950, the Council was corresponding with approximately 32 doctors interested in coming to Virginia and 66 communities in the state directly or indirectly requesting doctors. It might be added that all communications from localities requesting doctors are carefully investigated. Detailed information regarding local schools, roads, hospital facilities, housing, etc. which might be of interest to physicians, is kept on file and made available on request. The Council is informing senior medical students at the Medical College of Virginia and the University of Virginia Medical School of the service and information which will be available to them when they complete their internships. It is also contacting the young graduates during their internships here and in other states. It is hoped that with information readily available to them, they will be encouraged to return to Virginia to practice in areas of need, and not be lost to other states.

As part of its unified health program, the Virginia Council on Health and Medical Care tries to make its specialized member organizations see their important place and relationship to the various other programs in the total health picture. After all cancer, tuberculosis, crippled children, heart, polio, etc. all benefit from expanded public health facilities, increased facilities at the medical schools, hospital and health center construction, improved mental hospitals, etc., and vice versa. Health programs are interrelated and cannot be set apart or isolated from one another.

The work of the Virginia Council on Health and Medical Care is becoming increasingly recognized as outstanding in its field. Many other states have written in for its constitution and by-laws, and educational material. Recently Mr. Aubrey D. Gates, Field Director of the Committee on Rural Health of the American Medical Associa-

tion, spent the good part of a day in Richmond getting background material on the Council's program and learning how it functions. In his report to the AMA he wrote, "reiterating what I have already said about the Virginia Council on Health and Medical Care, my appraisal is that it is one of the best, if not the best, State Council in the nation". Mr. Gates pointed out that the Council "is rendering a fine service and especially in the field of promoting better relationships between agencies and organizations".

Fine recognition was paid to the Council in an editorial entitled "Mapping Rural Medicine", which appeared in the *New York Times* on October 1st. It stated, "The Virginia Council on Health and Medical Care offers an example of how to map careers in rural medicine. The Council's surveys have shown where every doctor in the state is located, the extent of his practice, and the need for medical service that is to be met in the community. Its maps are guides to young physicians completing their internships, or to experienced practitioners who would like a breath of country air".

The Council's success can be directly attributed to the fact that it belongs to all Virginians: physicians, farmers, nurses, lawyers, dentists, club women, professional and lay health workers, and others. They are all working together to make it a success, and are bringing better health and medical care to the people of our Commonwealth in this democratic way.

Edgar J. Fisher, Jr., *Director*
Virginia Council on Health and Medical Care

Floral Eponym

Alstonia

Alston, Charles (1683-1760)

DR. CHARLES ALSTON was educated at Glasgow and Leyden. In the latter University he was under Boerhaave and there he became acquainted with Alexander Monroe. The two Scots returned to Edinburgh and revived the medical lectures at the University. Alston became lecturer in botany and materia medica, and later the superintendent of the botanical gardens. Upon his death he was succeeded by Hope, who edited and published Alston's notes on materia medica. Robert Brown dedicated to him the apocyneous genus Alstonia.

Alstonia is a genus of 30 or 40 species of Asiatic and Australian trees.

AMERICAN MEDICINE MUST REMAIN FREE*

W. C. CAUDILL, M.D.,
Pearisburg, Virginia.

With this session, we complete a seasonal cycle. In the year that has passed since our last meeting, world events have moved with stunning rapidity. We are just beginning to realize the severity of the sacrifices which the free peoples of the world will be called upon to make during the period ahead.

At this moment, of course, it is difficult to appraise the precise role which will be played by the organized medical profession. Of one thing we are certain, however: If the medical profession of the United States is to render effective service in peace or in war, it must remain free. This is no time to bind the hands of the American doctor with the manacles of socialization.

Whatever the extent or the duration of the present crisis, we cannot afford to jeopardize the continued progress of American medical science. It is now high noon in the 20th century. During the 50 years just passed the medical profession has made astounding advances in all phases of the healing arts. In the field of preventive medicine there has been an enormous diminution in the diseases and deaths of early life, the acute infectious diseases, and maternal and infant mortality. The American community no longer fears an epidemic of typhoid or diphtheria, or smallpox.

In the field of medical research we have witnessed huge strides in the development of specifics. In the fight against bacteria the medical arsenal is being stocked with new and powerful antibiotics. One by one, the scourges of the human body are submitting to the unrelenting efforts of the medical scientist.

In the field of surgery, we have perfected techniques of almost incredible complexity. The clinical experience afforded by two world wars enabled the medical profession to perform near miracles in the healing of wounds and the restoration of diseased and damaged tissue.

The general practice of medicine is on a higher level than ever before. The family doctor has at his disposal diagnostic and therapeutic aids which increase his effectiveness many fold. He has available modern and well-equipped hospital facilities, staffed by trained technicians. Opportunities for medical education were never greater, as our accredited schools turn out increasing numbers of graduates each year. In addition, there are expanding opportunities for doctors to undertake graduate work.

All these things are part of the case history of the past half century. I venture to suggest that in no other branch of human endeavor has there been comparable progress. And I venture to suggest also that the reason for that progress may be found in the fact that during these past fifty years there has been a strong spirit of freedom and individual initiative in the medical profession. Progress in medicine, as in other fields, is best nurtured in a free soil.

What shall we say of the next fifty years? While we do not pretend to assay the future, we do know that we are far from the ultimate. We have only begun to be astounded by medical science.

That future, of course, is conditional. It is ours only if we continue to deserve it. It is ours only if we adhere to the principles of freedom which have guided our steps in the past. We shall lose that future if we permit the heady wine of socialism to dull our sensibilities and destroy our initiative.

I intend this as a solemn warning. The insidious processes of socialism are already threatening not only the medical profession, but all of our free institutions. This year 1950 finds our United States standing virtually alone as the last bastion of constitutional freedom in a world bent on embracing various forms of collectivist society. But our own anchors are no longer firm. We, too, are drifting, faster than most of us realize, toward the yawning vortex of the welfare state.

The great labor leader, Samuel Gompers, warned in an address given more than thirty years ago: "I bid you have a care in all these attempts to regulate the personal relations and the normal activities of the citizenship of our country before it is too late. For a mess of pottage, under the pretense of compulsory social insurance, let us not voluntarily surrender the fundamental principles of liberty and

*Address by the President before the annual meeting of the Medical Society of Virginia at its meeting in Roanoke, October 9, 1950.

freedom."

We must understand that the body politic, like the human body, can be ruined by overmedication. In a class conducted by Sir William Osler, the students were asked how much of a certain drug should be given to a patient. One student promptly answered, "Four grains", and none of the others dissented. Sir William continued discussing the case symptoms, and a few minutes later he was interrupted by the same student, who asked permission to change his answer. Sir William gravely consulted his watch and said, "I'm sorry, young man, but your patient has already been dead for three minutes."

We see much the same thing happening today in our nation's economic life. Fuzzy-minded politicians and addle-brained theorists have the idea that because one grain of socialization has proved helpful, four grains well bring us utopia. Because it is necessary for the government to undertake a few essential services, they feel that the government should perform more and more services and ultimately attend to all our human wants and needs.

The advocates of government by overdosage are busy with their propaganda. They have introduced numerous schemes to set up a system of compulsory health insurance. They insist that America follow the lead of nations whose health standards are far below our own. We hear the assertion made that medical care is too expensive for the average American family. The prescription for this situation is to establish a vast bureaucratic monster, to administer a compulsory health program at a cost estimated variously between ten and twenty billion dollars a year.

The whole thing is a patent nonsense. Why does America need socialized medicine when she leads the world in medical research and scientific development? Why does America need socialized medicine when we have more doctors, dentists, nurses, and hospitals per capita than any other country? Why does America need socialized medicine when American citizens enjoy a long and continually lengthening life span? Why does America need socialized medicine when there are enrolled today in voluntary medical insurance programs more than seventy million people, in addition to the tens of thousands who participate in industrial, fraternal, and labor-health programs and private group-clinics?

Why indeed? The whole idea is a dismal distortion of logic. It is blandly declared that 325,000 people die needlessly each year, and the implication is that if their medical care were only turned over to the government, the figure would be mysteriously reduced to zero. But when we examine the figures, we find that some forty thousand of these deaths are deaths by accident—and no health insurance program I know of has ever been effective against accidental death. Another one hundred thousand of these deaths are caused by cancer and heart disease—diseases which are the inevitable accompaniment of old age. Communicable diseases account for one hundred and twenty thousand of the deaths. We know that these can be prevented because we are preventing them in large measure. Through the efforts of the medical profession over the past fifty years illnesses and fatalities from these diseases have been reduced at an astounding rate.

The arguments advanced by the proponents of socialized medicine are so feeble that no informed person can be convinced by them. But there is one argument that the socializers have not yet mentioned. If they wanted to be fair about it, they would call as their number one witness a man named Nikolai Lenin, the father of the police state. "Socialized medicine", said Comrade Lenin, "is the keystone of the arch of the socialistic state."

Here is the crux to the whole issue. Socialized medicine is the entering wedge. It is the decoy. It would be the means of creating a gigantic new army of bureaucrats, replete with regional administrators, inspectors, coordinators, and collectors. It would elevate political hacks to serve as local czars in every city, town, and village in the country. The healing art would degenerate into a political pill mill, with every doctor, dentist, nurse, and technician reduced to the status of a lackey on the public pay roll.

The inevitable accompaniment of socialized medicine would be dictatorial control over the life of the individual. Members of the medical and dental professions, of course, would be the first to feel the long arm of government control. They would be placed in the same position as the doctors and dentists in Great Britain, whose Labor Government has instituted an all-inclusive Compulsory Health Insurance Program. Impartial observers agree that British doctors are so desperately over-worked and so burdened with bureaucratic red tape that they are losing all incentive for adequate practice. "Quetopia" is the term that has been applied to the British medical

phenomenon. The "something for nothing" philosophy has grasped the British people to such an extent that doctors are forced to waste valuable time dealing with patients whose ills are either imaginary or negligible, while truly deserving patients await their turn.

Yet there are those who would have us destroy the soul of American medicine by following the British example. There are those who would have us adopt an expensive, cumbersome, inefficient, and dictatorial scheme which would jeopardize the high medical standards of the present and the progress which we may expect in the future. There are those who would play fast and loose with the fiscal structure of the United States by instituting a tax levy of from three to ten per cent on every paycheck up to $4,800 a year, at a time when our national economy demands rigid control over expenditures in order to fulfill our military and diplomatic obligations. There are those who would destroy the sacred personal relationship between doctor and patient and inject the government as an unwelcome, prying third party.

You and I know who are the chief advocates of political medicine. They are the bureaucrats like Oscar Ewing, of the Federal Security Agency, who see in socialized medicine a means of expanding their power and insuring lush political plums for themselves and their political satellites. They are the powerful and arrogant labor leaders who view socialized medicine as an additional means of control over the vast army of American workers. They are the Communists and their dupes who view socialized medicine as the "keystone of the arch of the socialistic state."

We may be thankful that the vast majority of the American people have not fallen prey to the fuzzy thinking of these elements. The front of opposition to socialized medicine is being rapidly expanded to include such influential organizations as the American Legion, the National Grange, the Veterans of Foreign Wars, the General Federation of Women's Clubs, the American Bar Association, the U. S. Chamber of Commerce, the American Council of Christian Churches, the American Farm Bureau Federation, and numberless other groups and individuals who have the courage to stand up for fundamental Americanism and refuse to be lured by the siren song of socialization.

The stand taken by these organizations gives the lie to any assertion that the American Medical Association constitutes the sole opposition to socialized medicine. The American Medical Association is only one of many organizations which have banded together in this crusade to maintain freedom in American medical practice.

But let it not be assumed that the medical profession is content with a negative approach to the economic aspects of medical practice. The American Medical Association is a pioneer in the development of voluntary prepayment plans. The approach of the A.M.A. to the nation's medical problems is on the broadest possible scale, embracing mental and physical health, disease prevention, medical treatment as needed, prolongation of life, and research for the advancement of medical science. It includes also a program of nutrition, recreation, prenatal care, child welfare, construction of hospitals and diagnostic centers, and health education. Prepaid medical service plans already in operation under the sponsorship of organized medical societies have a membership of seventy million and it is estimated that the number will be increased to ninety million within the next three years.

This is ample evidence that America's problems of medical economics are well on the way toward being solved—solved not through any intervention of the politicians, but solved through the efforts and endeavors of the medical profession itself, with the cooperation of various lay organizations, acting under the time-tested principles of American free enterprise.

Ministers to the sick have a reputation which neither time nor calumny can tarnish. Even the caustic skeptic Voltaire could find it in his heart to write, "Nothing is more estimable than a physician who, having studied nature from his youth, knows the properties of the human body, the diseases which assail it, the remedies which will benefit, exercises his art with caution, and pays equal attention to the rich and poor." Similarly, Robert Louis Stevenson wrote that the physician has an opportunity as no other class of men to be the flower of our civilization.

This is an opportunity we do not hold lightly. So long as the doctor remains free, so long as the society he serves enjoys a maximum of liberty, we have the promise that American standards of health will continue to be the highest in the history of the world.

SYMPOSIUM ON HEART DISEASE†

MANAGEMENT OF THE COMPLICATIONS OF ACUTE MYOCARDIAL INFARCTION*

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There are numerous complications that may occur during the course of acute coronary occlusion with myocardial infarction, all of which tend to make a serious situation all the more precarious. These complications may involve the heart itself or may occur in other organs. This paper deals with those complications involving the heart or originate within the heart. The more important of these complications specific to the heart are shown in the table. These data are taken from 222 cases of acute myocardial infarction seen at the Medical College of Virginia Hospitals from 1938 to 1947, inclusive, and at the McGuire Veterans Administration Hospital from April, 1946, to September, 1949. The overall mortality for this group of patients was 24%. In this table are listed, in the order of frequency, the more common complications occurring during the course of acute myocardial infarction. Since we are concerned at this time with episodes that occur during the acute stage, only the events during the first three to four weeks are noted. The chronic residuals or late events of myocardial infarction are not within the scope of this paper.

Acute Myocardial Infarction

	Number	*Mortality*
Total Series	222	24%
With Important Complications:		
Congestive Heart Failure	33	42%
Serious Arrhythmias	29	42%
Shock	27	74%
Embolism	10	80%
Total	99	55%
Without These Complications	123	11%

Table I: Important complications occurring during the course of acute myocardial infarction.

It is seen that congestive failure occurred in 33 cases, 14 of whom died, giving a mortality of 42%. Serious arrhythmias, which include auricular flutter, auricular fibrillation, supraventricular tachycardia, ventricular tachycardia, and ventricular fibrillation, occurred in 29 instances, 12 of whom died, giving a mortality of 42%. Shock (systolic pressure below 90) occurred in 27 cases, 20 of whom died, giving a mortality of 74%. Embolic phenomena occurred in 10 cases, 8 of whom died, with a mortality of 80%. There are other cardiac complications that may occur, but these are the most important from the point of view of incidence and seriousness. It is seen that the mortality from myocardial infarction is definitely greater when these disturbances occur. This is illustrated in another manner by the 123 cases in this series which did not have any of the above-mentioned complications. Only 13 of such cases died, giving a mortality of 11%. Many of this group died suddenly, possibly from some of the above complications, but we had no definite evidence to this effect and so they are placed in the group without complications. It is probable that this mortality figure would be even lower if all the facts were known.

These data do not allow strict statistical analysis because of many factors, the more obvious of which is that one patient may have had more than one of these complications. In addition, we cannot be sure that the particular complication noted was the actual cause of death. Nevertheless, they indicate in a general way that their occurrence definitely increases the hazards of myocardial infarction.

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Since we are unsuccessful, so far, in preventing myocardial infarction in most instances, the least we can do is attempt to minimize its hazards once it has occurred. This involves many therapeutic approaches, but it seems to us that especial efforts toward the prevention and treatment of the more significant complications should be particularly fruitful. It is the purpose of this paper to discuss certain aspects of the management of these complications. It is possible to prevent some of these complications and this, of course, is the therapeutic ideal. Others, however, occur in spite of prophylaxis or have no particular prophylactic treatment. When this occurs, we must use all therapeutic measures at our disposal to bring to an end this unfavorable event or minimize its adverse effects on the heart and circulation.

Congestive Heart Failure. Congestive heart failure developing during the course of myocardial infarction is the most frequent complication. It is more likely to occur if hypertensive heart disease is associated with the coronary disease. There is nothing particular that can be done to prevent its occurrence. The patients are already at bed rest and oxygen is being given, at least for the first few days. These measures are routine in acute infarction and certainly tend to prevent failure by conserving and nourishing the heart. In general, its management is about the same as when failure occurs under other circumstances. The patients are already at maximum rest. Oxygen by tent, mask, or nasal catheter should be administered. A low salt diet should be used since this has a definite place in reducing fluid accumulations. Formerly digitalis was considered by some to be contraindicated in acute myocardial infarction. Digitalis does have an irritative and stimulant action which might tend to produce ectopic rhythms and rupture of the myocardium from a more vigorous contraction. Certainly this drug should not be given unless congestive failure is present, but under such circumstances it is definitely indicated. The possibility of more vigorous contractions to the point of myocardial rupture has been entirely discounted and actually presents no hazard. The possibility of initiating ectopic rhythms is very real since it has been shown that a decrease in coronary blood flow increases the susceptibility of the myocardium to the irritable effects of digitalis. For this reason it is advisable to give quinidine, grains 3-6, every two to four hours while digitalis is being given. There is a further indication for quinidine being given along with digitalis. Digitalis given alone when auricular fibrillation and congestive failure occur in myocardial infarction has resulted in the past in a high percentage of fatal emboli. Of course, with the current use of anti-coagulants, this hazard probably is greatly reduced. However, the first consideration is sufficient to urge the use of quinidine whenever digitalis is being given. These measures, low salt diet and digitalis with quinidine, usually suffice to restore compensation. Occasionally, diuretics, either zanthine or mercurial, may be needed. In the use of this latter, caution must be exercised not to use mercurials too extensively with a low salt diet, especially when there is associated renal disease. This may result in severe salt depletion and its consequent hypotension.

Serious Arrhythmias. In regard to the more serious arrhythmias, certain general statements can be made. Myocardial infarction renders a heart more irritable and more sensitive to the action of stimulating agents, such as tobacco, digitalis and others. Such increased irritability and sensitiveness makes the heart more prone to develop ectopic rhythms, which are detrimental in themselves. They cause over work for the heart because the beats may be both rapid and ineffectual, with the heart expending excess energy to no benefit. Further, there may be such ineffectual beating of the heart that there is functional cardiac standstill and the patient dies, as in ventricular fibrillation. Therefore, it is important to prevent such arrhythmias or control them properly once they occur. The prevention of these arrhythmias can be attained in most instances by the use of quinidine sulfate in the dose of 3-6 grains three times daily, or perhaps as often as every two to three hours. There are some who advocate the institution of such prophylactic therapy in every case of acute myocardial infarction. We think this is hardly justified, and institute prophylactic quinidine only when premature beats, whether supraventricular or ventricular, occur. These extrasystoles are not particularly harmful in themselves, at least their occurrence does not increase the mortality, but they are in many instances the forerunners of a more serious ectopic rhythm. We likewise advise the use of prophylactic quinidine, when digitalis has to be used in a case of acute myocardial infarction. As mentioned above, infarction increases the sensitivity of the heart to

the stimulating effects of digitalis and ectopic rhythms are more likely to arise under these circumstances. Quinidine depresses this irritability and tends to prevent such disorders. Finally, smoking should be prohibited, not only because of its possible effect on the coronary circulation, but to eliminate a possible stimulant to the development of an ectopic rhythm.

Should ectopic rhythms develop, specific measures are needed. The more commonly occurring disorders are auricular flutter, auricular fibrillation and ventricular tachycardia. Auricular fibrillation is in many instances a transient phenomena during the course of myocardial infarction. For this reason, it is best to wait twenty-four hours before the institution of anything more than prophylactic quinidine. If it should persist more than twenty-four hours, it is more likely to continue and attempts should be made to abolish it if the heart is compensated. This can be accomplished in most instances with quinidine, grains 6, every two hours for five to seven doses. Careful check of the heart should be made before each dose to see whether normal rhythm has been restored or adverse effects are resulting. If the rhythm is not restored to normal after such a course, or if failure develops, further attempts to break the rhythm with quinidine should be abandoned and the patient digitalized.

Auricular flutter is a much more difficult rhythm since it tends to be persistent and is usually unresponsive to quinidine. Fortunately, this does not occur so often as auricular fibrillation. It is probably better to go ahead and digitalize the patient at the onset. Following digitalization, the rhythm may revert to normal, probably a spontaneous phenomenon. At other times, the flutter is converted into fibrillation, which may revert to normal rhythm upon discontinuing the digitalis. In most instances, however, digitalis has no particular effect on the flutter itself, but does increase the block between the auricles and ventricles. This results in slowing the ventricular rate to about normal and relieves the stress of a rapid heart action on the heart.

Ventricular tachycardia is a very serious arrhythmia since it can lead to death rather rapidly if something is not done about it promptly. It is made more difficult by the fact that digitalis, in many instances, produces this ectopic rhythm and hence is contraindicated in treatment. So we are left with only quinidine as a therapeutic agent. This can be given as described above, except that we will risk giving 6 grain doses over a longer period of time since the situation is critical. However, unless results are obtained, this cannot be continued for too long by mouth because the patient's condition usually becomes near fatal in 18 to 24 hours. Under such circumstances, more heroic measures are needed which consist of giving quinidine intravenously. This is a very dangerous procedure, but is warranted by the critical state of the patient. He will die shortly if normal rhythm is not restored. Intravenous quinidine can be prepared with some difficulty by dissolving 15 grains in about 300 cc. of distilled water. A special preparation for intravenous use, such as Quinidine Lactate (Lilly) can be used. This comes in ampules containing 0.65 gm. of quinidine lactate which is diluted to 50 cc. with 5% glucose. These preparations are given by slow intravenous drip with the physician's finger constantly on the patient's pulse. At the first break in the rapid pulse rate, the drug is stopped. Failure to stop the drug at the instant of effect may result in death of the patient from quinidine poisoning.

Shock. The development of shock is a fairly common occurrence and is the mechanism of death in many cases of myocardial infarction. This occurs, ordinarily, within the first twelve to twenty-four hours of the onset of the infarction. The patient's blood pressure drops, his skin becomes cold and clammy, the heart sounds are faint, the pulse is weak and thready. The course is fairly rapidly downhill with falling blood pressure, oliguria or anuria, unconsciousness and death in a day or so. Formerly, we stood anxiously by and watched the inevitable occur. We recognized the shock state, but were afraid to use the recognized treatments for shock, other than keeping the patient warm. Stimulants in the form of adrenalin were sometimes advised, but now it is believed that they do more harm than good. The use of intravenous blood or plasma was avoided for fear of overloading an injured heart and precipitating further complications such as congestive failure. However, it has come to be realized that the shock state, while predominantly central in origin, nevertheless initiates a vicious cycle which is injurious to all organs in the body, but is particularly bad for the heart. The fall in blood pressure lowers the head of pressure at the coronary orifices which in turn

diminishes the blood flow through these arteries. This is detrimental not only by diminishing the flow of blood through the arteries that are open, but also by impairing the development of a collateral circulation around the occluded artery. All of these factors lead to greater myocardial ischemia and probably greater areas of infarction. This in turn produces further shock and the cycle is repeated. Therefore, vigorous treatment is as imperative in treating the shock of myocardial infarction as that due to other causes. Blood and plasma transfusions have been found to be distinctly beneficial under these circumstances and now we have no hesitancy in instituting this therapy when shock occurs in myocardial infarction. About the only precautions taken are to run the transfusion rather slowly and to watch the patient a little more closely than we do under other circumstances. It is very gratifying to observe the patient come out of his critical state with a rise in blood pressure, a brightening of consciousness and improved renal function. It is a source of additional encouragement to realize that the coronary circulation is also much improved by this treatment. We have noted no ill effects from such a procedure. This gratifying response has caused us to consider the possibilities of arterial transfusions under these circumstances. This type of procedure can cause immediate increase in aortic pressure and with much less blood than is required by the venous route. In addition, this technique would obviate the potential danger of overloading the damaged heart before the beneficial effects of increased arterial pressure are attained. Arterial transfusions, however, present certain technical difficulties at the present time. Nevertheless, it is theoretically very promising and studies are currently underway to eliminate the technical difficulties and to evaluate its efficacy.

Embolic Phenomena. Embolic phenomena in the past have always been a serious threat during the course of acute myocardial infarction. Its incidence was not too frequent, but in nearly all instances it was fatal when it occurred. Preliminary results so far seem to indicate that the use of anticoagulants have reduced the possibility of this serious complication and should be used routinely in order to prevent embolic phenomena. A more detailed discussion of this therapy is to be given in the paper that follows. In this connection, I might say that we have seen no instances of embolism occurring in patients with adequate anticoagulant therapy. The ten cases noted as having embolism occurred in patients with no anticoagulants or inadequate amounts. As has been mentioned, the use of quinidine along with digitalis when treating auricular fibrillation in myocardial infarction has been shown to reduce the incidence of emboli. So both of these measures should be used as prophylaxis to prevent this serious complication. If embolism occurs, the embolus should be removed surgically as quickly as possible if it is in an accessible artery. Sympathetic block should also be used if the embolus lodges in an extremity artery. Papavarine in doses of grains 1½ should be given every four hours whether or not operation can be performed. On the whole, this is a very distressing condition, and treatment in many instances is unsatisfactory. It is much better to try to prevent them by the measures mentioned above.

CONCLUSION

Acute myocardial infarction is a serious catastrophe in the life of any person. It may be an immediate threat to life as well as imply an unfavorable outlook for the future. However, the chances of surviving the acute episode are very good provided the complications of serious arrhythmias, congestive failure, shock and embolism do not occur. As a corollary, the occurrence of these complications greatly decreases the chances of survival. We should, therefore, be on the alert to prevent these complications and to treat them adequately should they occur. In this way, we can hope to reduce the immediate hazard of this condition.

DISCUSSION

DR. JULIAN R. BECKWITH, Clifton Forge: Dr. Porter has covered the subject so thoroughly that there is very little left to be added.

The management of myocardial infarction consists to a great extent of the prevention or treatment of the complications of the disorders. To date we know of no way to prevent coronary sclerosis, which leads to coronary thrombosis with resulting myocardial infarction. Perhaps we can prevent some instances of myocardial infarction by cautioning people who probably have coronary sclerosis to avoid undue exertion which would result in relative coronary insufficiency followed by myocardial necrosis. Cautioning people about keeping their weight down would also probably reduce the incidence of coronary disease. However, the management of the disease lies in the management of its complications.

Dr. Porter has shown that heart failure carries a high mortality, and he has pointed out that this should be

controlled. We have used mercurial diuretics and a low salt diet on several occasions without digitalis; however, we do not hesitate to use digitalis in the heart failure that follows myocardial infarction if necessary.

Ventricular tachycardia was mentioned as a serious complication, and it might be of interest to mention a patient that we had recently who has this disorder for nine days before the rhythm reverted to normal. Quinidine was given in doses of 9 grains every 3 hours and the ventricular rate decreased from 150 to 100. Concurrently the blood pressure and peripheral circulation became normal, and urinary output increased. Finally quinidine was stopped and the rhythm returned to normal. This may have been coincidental.

It appears that one of the most important advances that have been made recently in the management of myocardial infarction is the use of blood and plasma to control shock. The effectiveness of this has been beautifully shown in the laboratory by Dr. Prinzmetal, whose experiments demonstrated that a ballooning out of the infarcted area occurred in shock and that this could be corrected by the administration of blood in sufficient quantities to control shock. We have had no clinical experience with this as yet but intend to employ it at the next opportunity.

Finally, I should like to emphasize, as Dr. Porter did, that most patients do well with myocardial infarction and that careful attention to details of the management of complications will save many lives.

This paper is an excellent summary of a timely subject, and I appreciate the opportunity of discussing it.

Chairman Outland: It occurred to me (though of course I shall not attempt to dictate it) that since the subjects of these papers are so closely related we might have the primary discussion on each one immediately after its presentation and then have the general discussion after all of them are read. May I have a suggestion on that?

A Member: I move that we do that, Mr. Chairman.

Chairman Outland: Is there any objection to that? If there is, don't hesitate to voice it. Since I hear none, we will proceed on that plan.

THE USE OF ANTICOAGULANTS IN THE MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION—

A Report of Sixty Cases*

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In 1938, Solandt and Best[1] described the use of heparin experimentally in dogs, as a preventive for thrombosis of the coronary artery but its clinical implications were not followed up because of the expense, the limited supply at the time, and the impractibility of administration. This drug may be given intravenously as the sodium salt or intramuscularly as Pitkin's menstruum. When given intravenously frequent determinations of the coagulation time of the blood must be carried out; thus, it is hardly practical for routine use. Intramuscular heparin has been used in coronary thrombosis and the results are said to be encouraging.[2] However, the drug is expensive and dicumarol appears to be the drug of choice at the present time.

Dicumarol was found by Professor Karl Link, *et al.*, to be the active principle of spoiled sweet clover which causes hemorrhagic disease in cattle.[3] This material which was synthesized by them is a white crystalline solid, soluble in alkaline solution but only slightly soluble in water. It depresses the prothrombin concentration of the plasma and in this way prevents clotting from taking place.

Chart I

PROTHROMBIN + THROMBOPLASTIN
+ CALCIUM = THROMBIN
THROMBIN + FIBRINOGEN = FIBRIN

Chart I shows briefly the well known clotting scheme. Prothrombin is formed chiefly in the liver and circulates in the blood. This combines with thromboplastin, which is found in many tissues, in the presence of calcium to form thrombin, which in turn combines with fibrinogen to form fibrin.

Dicumarol has a delayed action so that a given dose will usually not become effective for 48 hours and its effect can be nullified in a few hours by large

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doses of synthetic vitamin K intravenously or by the administration of fresh whole blood.

In 1942, Allen, *et al.*,[4] and Wright, *et al.*,[5] described the use of dicumarol in the management of thromboembolic disease, particularly in the prevention of extension of the thrombosis in the veins of the extremities and thereby preventing pulmonary embolism. This drug was found to be safe, cheap, easy to administer and effective when given by mouth.

In 1946, reports of the use of dicumarol in the management of myocardial infarction began to appear in the literature[6] and it seemed likely that the mortality of this disease could be considerably reduced by the routine administration of this drug. It has been well known for some time that a large part of the mortality of myocardial infarction was due to the development of various thromboembolic phenomena and Table I shows a tabulation of several series of cases of myocardial infarction with the incidence of thromboembolic complications. The incidence of thromboembolic complications is seen to vary in the different series but it is apparently substantial. Of 2,127 cases, 325 or approximately 15% of the total number of cases had thromboembolism. Since the mortality from this alone is considerable, measures that would reduce the incidence of these complications would obviously reduce the mortality of myocardial infarction.

TABLE I
THROMBOEMBOLIC PHENOMENA IN MYOCARDIAL INFARCTION

Source	No. of Cases	No. With Thromboembolic Phenomena	%	Outcome
Conner and Holt[7]	287	42	14.6	
Master, Dack, and Jaffe[8]	500	29	5.8	6% were fatal
Nay and Barnes[9]	100	18	18	
Peters, Guyther, and Brambel[6c]	60	10	16.6	16% were fatal
Hellerstein and Martin[10]	160	73	45.0	45 contributed to death
Mintz and Katz[11]	572	52	9.9	55.8% died
Wright, *et al.*[12]	368	83	25.0	10% died
Present Series	80	8	10.0	75% died
Total	2,127	325	15.2	

Table II shows the reduction in mortality in the series in which dicumarol was used. This reduction in mortality appears to be chiefly due to the decrease in the thromboembolic phenomena. In Wright's series of 800 cases,[12] death not preceded by a thromboembolic incident occurred in 14% of the control as compared with 12% of the treated group; whereas, the total mortality was 24% and 14.9% respectively. This report also demonstrated that the drug was useful in each of the first four weeks and appeared to prevent extensions of the original infarct, as well as venous thrombosis, cerebral emboli, and peripheral emboli. It is most effective in patients over 50 years of age.

METHOD OF ADMINISTRATION

Dicumarol is given by mouth in doses that are determined by its effect on the prothrombin time of the plasma. This determination must be done daily and the prothrombin activity must be kept within the therapeutic range in order for the drug to be effective. If the prothrombin level drops too low, serious hemorrhagic complications may develop. It is, therefore, imperative that daily prothrombin levels be known.

The method of Quick[14] is satisfactory for determination of the prothrombin time. This consists essentially of adding rabbit's brain as a source of thromboplastin, and calcium chloride to the patient's plasma. The clotting time of this plasma is observed and the prothrombin activity is reported in seconds. A normal control determination is done as a comparison with each test. The average normal prothrombin time is 12 seconds. A therapeutic level is considered to be between thirty and sixty seconds.

In administering dicumarol, a therapeutic level is obtained as quickly as possible though there is usually a delay of about 48 hours after the drug is given before this level is reached. The initial dose is 300 mg., and if the prothrombin time is below 20 seconds the following day, 200 mg. are given. The prothrombin time is then usually between 20-30

Table II

Mortality of Myocardial Infarction

Source	Control No. Cases	Control No. Died	Control %	Dicumarol Treated No. Cases	Dicumarol Treated No. Died	Dicumarol Treated %
Nichol and Page[6b]	--	--	--	44	8	18
Peters, *et al.*[6c]	60	13	21.6	50	2	4
Parker and Barker[6d]	--	--	--	50	5	10
Mintz-Katz[11]	572	125	21.8	--	--	--
Greisman and Maurer[13]	100	35	35	75	7	9
Wright, *et al.*[12]	368	87	24	432	64	15
Present Series	80	21	26.5	60	9	15
Total	1,180	281	23.8	711	95	13.3

seconds and 100 mg. are given. However, the size of all doses after the initial dose depends on the prothrombin activity. The response of individuals may vary from day to day and different individuals react differently. Some are hyperreactors; that is, they will have a marked reduction in prothrombin activity following the initial dose and others are hyporeactors; that is, they will require larger amounts of the drug before an effective level is reached.

In determining the dosage of dicumarol for a certain day, the previous reaction to the drug as well as the previous day's levels are considered. If, for example, the prothrombin time was 35 seconds, one would hesitate to give any more if the level had been increasing during the preceding 2-3 days, while if it had been decreasing and was on a downward trend, 50-75 mg. would be given.

Dicumarol is given to patients for four weeks from the time the infarction occurred or from the time of the last thromboembolic episode. The drug is then stopped and the patient is allowed to gradually increase his activities. Even though the patient is first seen two weeks after the infarction has occurred, the drug is administered because it has been shown[12] that the incidence of thromboembolic complication is still high during this period.

Contraindications

The most important contraindication is the inability to do daily prothrombin determinations while the drug is being administered. The other contraindications are:

1. Liver damage which might result *per se* in decrease in prothrombin activity.
2. Blood dyscrasia with bleeding tendencies.
3. Ulcerative lesions of the gastro-intestinal tract.
4. Renal insufficiency.
5. Vitamin K deficiency.

Complications

The only known complication is hemorrhage, which can be serious. Fortunately this did not occur in our series. The treatment of hemorrhage centers around the administration of synthetic vitamin K and transfusions of whole blood. Seventy-two mg. of vitamin K given intravenously will usually cause a lowering of the prothrombin time to normal within a few hours. Fresh whole blood is also useful in controlling hypoprothrombinemia, the amount depending on its effect on reduction of the prothrombin time.

Purpose of the Present Study

Our clinical impression after using dicumarol for

Table III

Control Group vs. Dicumarol Group

Age Groups, Mortality

Control Group Age Groups	No.	Died	Mortality	Dicumarol Group Age Groups	No.	Died	Mortality
30-39	3	1	33.3%	30-39	1	0	0
40-49	12	1	8.3%	40-49	8	0	0
50-59	26	4	15.4%	50-59	14	0	0
60-69	26	9	34.6%	60-69	25	5	20%
70-79	12	5	41.6%	70-79	11	3	27.2%
80-89	1	1	100%	80-89	1	1	100%
Total	80	21	26.25%	Total	60	9	15%

about eighteen months was that the mortality was considerably reduced; hence, it was decided to compare the mortality of those treated patients with a group that had been previously reviewed,[15] who had not been given dicumarol.

A total of 140 patients are included. Eighty make up the control group and sixty the treated group. The former were admitted to the hospital from July, 1941, through September 1, 1943, and from January 1, 1946, through September 1, 1947, so were not consecutive cases. The treated group consisted of sixty patients who were admitted from January 1, 1948, through July, 1949. Both groups contained white and negro patients. The diagnosis of myocardial infarction was made by clinical observation as well as by characteristic electrocardiographic changes. They were all studied and managed according to a plan previously outlined,[15] in addition to which the treated group was given dicumarol.

Results

As can be seen in Table III the distribution according to age groups is about the same in each series. There are not enough cases under forty years of age to make a statistical comparison, but it is striking that no deaths occurred in the treated group. The comparison made in the groups between 50-59, 60-69, 70-79 shows that the mortality is significantly reduced in the treated series.

Thromboembolism and Extension of Myocardial Infarction

Table IV depicts the thromboembolic complications that occurred in the two groups of patients. A total of 9 complications occurred in 8 patients in the control group. Six had pulmonary infarctions of whom four died. One had cerebral embolism, one had peripheral embolism, and one had peripheral thrombosis all of whom died. The patient who had peripheral venous thrombosis died with pulmonary embolism.

Thus, of the eight patients, six died, a mortality of 75%.

Table IV
Thromboembolism and Extension of Myocardial Infarction

Control Group				Dicumarol Group			
Age Groups	No.	Died		Age Groups	No.	Died	
30-39	2	1	Pulmonary Infarct, L.* Per. Emb., D.*	30-39	0	0	
40-49	1	1	Pulmonary Infarct D*	40-49	0	0	
50-59	1	1	Perip. Thrombosis and Pulmonary Infarct D*	50-59	0	0	
60-69	2	1	Cerebral Embolism, D.* Pulmonary Infarct, L.*	60-69	1	0	Extension of Infarction
70-79	2	2	Pulmonary Infarct D* Both died.	70-79	0	0	
80-89	0	0		80-89	0	0	
Total	8	6		Total	1	0	

Control Group	No.	Result
Pulmonary Infarction	6	4 died
Cerebral Embolism	1	1 died
Peripheral Embolus	1	1 died
Peripheral Thrombosis	1	1 died

*L.—Lived
*D.—Died

In the treated group, one had an extension of the infarction but no other thromboembolic complications occurred. This patient was given dicumarol in the usual manner after the initial infarction and on the 13th day he developed pain again and the electrocardiogram showed changes indicative of an extension of the infarct. Leukocytosis developed and the sedimentation rate subsequently became elevated again. On reviewing his record, it was found that the prothrombin time was not within the therapeutic range on the three days previous to the extension. After this second episode of infarction in this patient, dicumarol was given for one month. The prothrombin level was kept within the therapeutic range and he had no further trouble.

Table V
Results of Treatment with Dicumarol in Patients with Acute Myocardial Infarction

Sources	No. of Patients	Deaths	Percent Deaths
Parker and Barker[6d]	50	5	10
Peters, Guyther, and Brambel[6c]	50	2	8
Wright, *et al.*[6a]	432	64	15
Greisman and Maurer[13]	75	7	9
Nichol and Page[6b]	44	8	18
Present Series	60	9	15
Total	711	95	13.3

Total Mortality

Nine deaths occurred in our series of 60 cases treated with dicumarol. This mortality of 15% compares favorably with those of other series and with the average mortality of the combined group. Table V.

Analysis of Deaths

Table VI shows that all but two of the patients who died had satisfactory prothrombin levels and none developed signs of thromboembolic phenomena. Six died with congestive heart failure, two continued to have severe pain and died during the first week after the infarction occurred. One died suddenly on the 13th day. Autopsy revealed an infarct of the subendocardial area of the myocardium of the left ventricle, about two weeks old. There was no evidence of cardiac rupture or of thromboembolic complications. Autopsies were done on three other patients. Each had congestive failure, but in none were thromboembolic complications found. This point is important in that it is well known that a large number of patients who die with congestive failure have thromboembolic disease.

One patient died six weeks after he had the infarction. He had been difficult to manage and got out of bed a number of times. Auricular fibrillation was present on admission. On the third day, a loud systolic murmur was heard, congestive failure followed, and digitalization was carried out. Pneumonia also occurred as a complication which was controlled by penicillin. Death finally occurred in congestive failure. Autopsy showed a perforation of the interventricular septum.

Three of the patients who died had previous infarctions.

Summary

1. One hundred and forty cases are reported, sixty of whom were treated with dicumarol and eighty were treated without this drug.

2. Mortality rate was 26.25% in the control group and 15% in the group treated with dicumarol.

3. There were eight patients in the control group who had thromboembolic phenomena, six of whom died.

4. Only one instance of extension of the infarction was found in the dicumarol group. This was not considered to be a dicumarol failure since the prothrombin time was not within the therapeutic range.

Table VI
Analysis of Deaths

Case	Age	Sex	Dicumarol Level	Time Weeks	Evidence of Thromboembolism	Autopsy	Cause of Deaths
W.M.	71	M	Satisfactory	6	No	Yes—Perforation of Septum	Congestive Failure
E.B.	61	M	Satisfactory	1	No	No	Congestive Failure
G.T.	65	M	Satisfactory	1	No	Yes	Congestive Failure
G.S.	60	M	Not Satisfactory	1	No	No	Unknown Shock, Cheyne-Stokes
W.W.	75	M	Satisfactory	1	No	No	Unknown
W.E.	80	M	Satisfactory	2	No	Yes	Unknown
A.B.	69	F	Satisfactory	3	No	No	Congestive Failure
A.G.	73	F	Not Satisfactory	2	No	No	Congestive Failure
E.L.	61	M	Satisfactory	2	No	Yes	Congestive Failure

CONCLUSION

From this series and others, it appears evident that dicumarol is a valuable adjunct in the management of acute myocardial infarction.

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DISCUSSION

DR. PAUL D. CAMP, Richmond: I greatly enjoyed reviewing Dr. Beckwith's very excellent paper and also his very good presentation today. He has covered the subject so thoroughly that there is little, if anything, to add. I shall try to emphasize some points that he could not dwell on in detail because of the limitation of time.

Heparin was used as an anticoagulant before dicumarol, but, due to disadvantages Dr. Beckwith mentioned, its use in coronary thrombosis has been rather limited. Probably with the further development and refinement of Pitkin's menstruum or some similar substance, depo-heparin (Upjohn) there will be certain cases in which it would be wise to start immediately on heparin, in order to gain advantage of its rapid action, and then switch over to or start simultaneously on dicumarol, stopping the heparin as the dicumarol action takes effect; such cases might be those brought into the hospital showing definite evidence of an extension of a myocardial infarct, and/or cases of myocardial infarction brought into the hospital presenting definite evidence of additional thromboembolic phenomena.

Dicumarol, I believe, is the drug of choice in the majority of cases for reasons given by Dr. Beckwith. Furthermore, we have the benefit of knowledge gained by its use in many cases and its proven ability to lessen the total mortality in myocardial infarction.

I have, of course, used dicumarol in many cases of myocardial infarction; in fact, unless there is some contraindication and if the patient can be hospitalized, I use it practically routinely. It has certainly been my clinical impression that dicumarol therapy does reduce the mortality in myocardial infarction. I have intended doing a statistical check up on my cases and I hope to do so in the near future.

Dr. Beckwith is to be congratulated for his excellent results, and his results most certainly do compare very favorably with other published series. It is interesting to note that of the nine cases that died, six died of

congestive failure, which again calls our attention to the severity of this complication and our inability to alter its course despite accepted methods of treatment in many cases. I should like to repeat for emphasis, that in the treated series there was no instance of thromboembolic complications while the patients were on adequate dicumarol therapy.

Finally, a word in regard to the contra-indication and complications of this type of therapy. I strongly agree with Dr. Beckwith that dicumarol should be given only in circumstances where we can get accurate daily prothrombin determinations and if the prothrombin level is initially below the desired therapeutic level, as it sometimes may be, I think it wise to withhold dicumarol until the prothrombin time rises above the therapeutic zone. I have seen one case, in consultation, in which I believe that hemorrhage was a definite complication and possibly had some effect on the patient's lethal exodus. Briefly, this patient had had a severe myocardial infarction and was being properly treated with dicumarol; the day before I saw him I believe he had a slight hemorrhage of the mucous membranes of the nose, which was thought to be traumatic as he was receiving oxygen by nasal catheter. An indwelling tube into body cavities is contraindicated. However, the day I saw him there was a suggestion of slight hemorrhage of the lower bowel. I suggested discontinuing dicumarol but did not urge vitamin K therapy, which, in retrospect, I should have done. The next day the patient had considerably more hemorrhage from the bowel, and died later in acute pulmonary edema. Another case with chronic rheumatic heart disease, with a superimposed arteriosclerotic and hypertensive heart disease and myocardial infarction, was being treated with dicumarol and developed what was clinically a cerebral embolus and hemiplegia. I think this represented a coincidental embolic phenomenon which is not infrequently seen in chronic rheumatic valvular disease. However, I did not have the courage to continue the dicumarol therapy, fearing that the episode perhaps represented a true hemorrhagic complication.

THE DIFFERENTIAL DIAGNOSIS OF ACUTE INFECTIOUS "IDIOPATHIC" PERICARDITIS AND MYOCARDIAL INFARCTION*

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Bonetus in 1700 published the first correlation of severe coronary disease and serious illness, describing a case of sudden death which showed at autopsy calcified coronary arteries and probable occlusion. Adam Hammer in 1876 made the first bed-side diagnosis of coronary thrombosis proved at autopsy. However, very little advancement occurred in the ante mortem diagnosis of this disease until Herrick's classical work in 1912. Richard Lower in 1669 described a case of adhesive pericarditis with autopsy. In 1896 William Ewart described ten points of aid in the diagnosis of pericardial effusion and discussed the question of surgical treatment. Today it is generally recognized that both coronary thrombosis and acute pericarditis are common diseases, the latter occurring in about 5% of postmortem examinations, and in the acute phase in from ½ to ⅔ of the total.

Acute pericarditis is frequently a complication of acute rheumatic fever with pancarditis. Bacterial infection is frequently the cause of acute pericarditis, it being found often as a complication of the primary disease. There are three other types of acute pericarditis which are noninfectious in origin, two of these, namely the pericarditis associated with myocardial infarction and that associated with uremia are common; the other accompanying trauma is rare. In addition to the above there is another type of pericarditis in which we have been quite interested and which we wish to discuss today; namely, acute infectious "idiopathic" pericarditis, which often simulates coronary occlusion. Barnes and Burchell in 1942 first described this condition as a distinctive form of acute pericarditis of benign nonsuppurative nature with pain in the chest as a frequent complaint. Massey in 1947 suggested the name "noncommittal idiopathic" pericarditis for this particular type of pericarditis.

We believe that this type of acute "idiopathic" pericarditis has in recent years perhaps been confused with coronary occlusion, for at the present time the probability that the diagnosis of coronary occlusion is made too frequently in cases having

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chest pain, cannot be doubted. We, of course, realize that this select group of cases of pericarditis is rare when compared with the number of persons having coronary occlusion. However, since the method of treatment and the immediate and remote prognosis is so different in the two conditions, the importance of a correct differential diagnosis must be emphasized. The diagnosis of a myocardial infarction should impose a grave immediate prognosis, a prolonged convalescence and usually a marked change in the patient's life and activities. Whereas, if acute "idiopathic" pericarditis is diagnosed correctly, the immediate and remote prognosis is good, the convalescence is usually relatively short and the patient can usually return to his previous normal life.

The clinical and laboratory features of help in the differential diagnosis of these two diseases are discussed below.

Age. Barnes and Burchell report the group tended to be younger with the pericarditis than with the pure coronary occlusion. The average age of their patients who had had coronary occlusion was about 55 years as compared with 42 years of age in the group presenting acute pericarditis.

History of some preceding acute infection. Nearly all observers have mentioned the fact that there is usually a history of some acute infection preceding the episode of pericarditis and this has been our experience. Usually it is in the upper respiratory tract. Barnes and Burchell found their figures to be that 50% had a history of upper respiratory infection preceding the initial attack of pericarditis. This, of course, is not the case of patients suffering from attacks of coronary thrombosis.

Pain is one of the most dramatic factors in the picture. The pain in acute pericarditis shows certain differences from that of acute coronary thrombosis. It is generally less severe and often requires less morphine for results. Usually it is impossible on a purely descriptive basis to distinguish the cause of the pain, as terms such as "pressure" feeling, heaviness, constrictive, "crushing", and the like are used by the patient to describe the sensations produced by infarction and pericarditis. The pain of acute "idiopathic" pericarditis is frequently intermittent and there may be short premonitory paroxysms unrelated to exertion preceding the attack of severe pain which forces the patient to request medical care. As has been mentioned, the pain is usually located in the substernal or epigastric or precordial region, but in a few instances it has been localized curiously over a small precordial area well to the left of the midline. The pain rarely extends to other regions, but in some instances there may be unilateral or bilateral pain in the shoulder and hip or diffuse pain in the sides of the chest and back. As a rule this pain does not radiate. It has been noted quite often that deep breathing and rotation of the trunk or swallowing may aggravate the pain. In some instances the history indicated that the patient was most comfortable in the sitting position leaning forward. Although exertion may produce the pain, frequently it will be found to be due to flexion or twisting of the trunk and the distress may persist for hours after the exertion ceases. Long after recovery from the acute phase of the disease the patient may experience attacks of pain in the chest of variable location and duration without any reference to exertion. The pain in pericarditis is usually caused by (1) excessive fluid or (2) pleural pericardial involvement. It may radiate to the sensory area supplied by the first five thoracic segments of the spinal cord. Onset of pericardial pain in this lesion occurs from the very beginning of distress, there being no time lag in its advent as in acute myocardial infarction. In the latter, aggravation by respiration and movement does not occur until 24 to 48 hours after the initial attack. A pleural friction rub may be heard in some cases. Small amounts of pleural effusion may be present. Pericardial rubs are usual and may be heard from some period of time even though pericardial effusion may be minimal.

The type of febrile reaction is of help in the differential diagnosis. Considerable elevation of body temperature as an initial sign is usual in "idiopathic" pericarditis. Temperature elevations from 103° F. to 104° F. are observed and often persist for almost two weeks. This association of the pulse-temperature ratio with a relative bradycardia probably represents the average picture of the febrile reaction. Temperature curves in both pericarditis and myocardial infarction may be rather irregular and erratic with pericarditis maintaining the elevated level longer. Sharp febrile reactions, particularly if they respond rapidly to treatment with antibiotics, speak for an infectious origin of the pericardial reaction.

Certain differences in Roentgenological studies are interesting. Roesler points out these small quantities

of effusion present in pericarditis may not be demonstrable until 300 c.c.s or more have accumulated. Sometimes a pleural thickening may be demonstrated, although this apparently has little direct connection with the production of acute symptomatology. In some cases of pericarditis the cardiac silhouette may be increased considerably in size. There can be cardiac enlargement in acute myocardial infarction. However, such degrees of cardiac enlargement are unusual. Consequently, if a huge cardiac silhouette is observed roentgenographically it favors the diagnosis of pericarditis rather than that of coronary occlusion.

One other factor has been observed in a case at the Medical College of Virginia and that is that the fluid in pericarditis of the non-committal or "idiopathic" type has been noted to be hemorrhagic in nature, whereas that of coronary occlusion, if a pericarditis is present and an effusion develops, is usually a clear effusion.

The type of dyspnea presented by the patient is important. Interference with respiratory efforts because of respiratory pain aggravation produces a type of dyspnea most often seen in acute "idiopathic" pericarditis. An intrinsic disturbance of the respiration is not essential. Typically, a shallow, rapid, painful type of respiratory cycle is observed. If associated with primary pulmonary pathology, obviously the adventitious sounds inherent in that disease would be present. However, this is not the case in pericarditis.

The findings on examination of the heart may be of help. There may be a disturbance of the cardiac sinus mechanism. These most commonly are (1) a sinus arrhythmia and (2) paroxysmal tachycardia. Grossly irregular rhythms are not the rule. Acute "idiopathic" pericarditis presents predominantly a pericardial friction rub which is detectable several hours after the onset of the disease and remains audible for longer periods of time, even up to several weeks. This is in contradistinction to the fleeting rub associated with localized areas of infarction which makes its appearance later after the first 24 hours.

Laboratory aid is obtained mainly through the leukocyte count. A polymorphonuclear leukocytosis is common to both pericarditis and myocardial infarction. The white blood count may not infrequently be entirely normal in pericarditis. Comparative values are practically worthless in differentiating acute pericarditis from a myocardial infarction, since high white blood counts may be suggested. However, the duration of the leukocytosis tends to be longer than in myocardial infarction. The sedimentation rate is not helpful.

The electrocardiographic studies probably present the greatest single aid in the differential diagnosis. Even then acute "idiopathic" pericarditis may be erroneously diagnosed, although the only other lesion which must be excluded, perhaps, is that of hemopericardium. This must be differentiated clinically because its electrocardiogram is practically identical with that of acute pericarditis. First description of that picture was made in 1928 by Scott, Feil and Katz. Distinction electrocardiographically between acute pericarditis and coronary occlusion depends on two things: first, it implies complete familiarity with the pattern of changes in the standard and precordial leads which are produced by myocardial infarctions in various locations. Of course, it must be admitted that infarctions of unusual location or size or multiple infarctions occasionally produce electrocardiographic changes that cannot be classified. Second, it is necessary to understand the various general patterns of electrocardiographic changes that are produced by acute and subacute pericarditis. The Q1, T1, and Q3, T3 changes in anterior and posterior infarctions of the left ventricle are well known and need no comment. We recognize many variations from these patterns, which, if they occur in a serial manner after an attack of pain in the chest, will support a diagnosis of coronary occlusion. The electrocardiographic changes, described by Wood and his associates, in infarction of the lateral walls may become established in time as another characteristic pattern.

The chief electrocardiographic changes noted in acute pericarditis are RS-T segment deflections and T wave changes, without a deep, wide or abnormal Q wave, for the injury is only superficial. The RS-T segment may show an abnormal upward convexity, or may be obliquely elevated. According to Goldberger, it may show a normal downward convexity or any pattren of myocardial injury.

Usually following the return of the RS-T segment to the base line, downward symmetrical T waves develop in leads that had an elevated RS-T segment, while upward symmetrical T-waves develop in leads

that had depressed RS-T segments. There are cases in which the abnormal T-wave does not develop following return of the RS-T segment to the base line.

In generalized pericarditis there is elevation of the RS-T segments in one or more of the precordial leads, in leads AVL and AVF, while a depressed RS-T segment is seen in AVR. Likewise, there will be elevated RS-T segment in the three standard leads.

The changes mentioned in the electrocardiographic pattern are due chiefly to the injury of the superficial layers of the heart muscle. This being the case, some of the changes are very similar to those that follow myocardial infarction.

A superficial infarct can cause RS-T elevation with a normal Q wave; however, lead AVL and AVF usually show reciprocal RS-T and T changes, due to localization of the injured area, while in pericarditis these leads show not reciprocal but similar RS-T and T changes, for the injury is usually diffuse.

The magnitude of the T wave is usually longer in infarction than in pericarditis. The RS-T segment deviations of pericarditis are not so marked as in infarction, nor do they last as long.

There is quite often a pericarditis complicating a myocardial infarct. There is usually only a pattern of infarct for the area of pericarditis is localized over the surface of the injury; however, Langendorf points out there may be a diffuse pericarditis of sero-fibrinous type following myocardial infarct.

Should this be the case in an anterior infarct, Goldberger states that the precordial leads and lead AVL show a QR pattern and an elevated RS-T; this is due to the fact that they face the epicordial surface of the infarct. Lead AVF has a normal QRS, but also elevated RS-T because it is facing the epicordial surface injured by the diffuse pericarditis, instead of the uncomplicated infarction pattern of depressed RS-T segment.

In a case of posterior infarct complicated by diffuse pericarditis, lead AVF shows a QR pattern and elevated RS-T, while the precordial leads and lead AVL show normal QRS but have elevated RS-T segment.

Clinically there may be a pericarditis with or without diffusion, but the electrocardiogram remains normal. However, the RS-T elevation in one or more of the precordial leads, lead AVL and AVF, with normal Q waves in these leads and a depressed RS-T in AVR, is most characteristic of acute pericarditis.

Ten cases illustrating this type of "idiopathic" pericarditis are summarized below.

CASE 1:

This patient, W.B.S., was a 52 year old white male in good health until three weeks ago when he began to note malaise and dull pain under the lower precordium. He went to bed, but felt no better. The dull pain has continued and lately there has been some soreness beneath the sternum. No fever during the first two weeks. For the past several days there has been fever, low in the morning and rising in the evening as high as 102°. There has been some cough without sputum during the past week. Substernal pain seems aggravated by cough. There has been no real pleuritic pain. Appetite has been poor and for several days the patient has had some vomiting brought on by paroxysms of coughing. Chest x-rays taken at home have been negative and EKG's have been within normal limits. White blood count has been about 12,000 with a predominance of lymphocytes and mononuclear cells. The sedimentation rate has been about 20 mm. an hour. Chief physical findings noted have been a prominent pericardial friction rub over the sternum present since the third or fourth day of the illness. Examination on admission showed the heart within normal limits to percussion, regular rhythm, sounds not remarkable, except for a to and fro friction rub over the whole heart, but loudest over the upper precordium and much less intense at the apex. No murmurs were heard. Lungs: in the left base there is dullness below the angle of the scapula with breath sounds diminished in intensity, but of slight increased pitch. Few very fine rales were heard in the left base after coughing. Tactile fremitus diminished over left base. Lungs otherwise clear.

Urinalysis on admission showed color amber, reaction acid, specific gravity 1.008, albumin 1 plus, sugar negative, acetone negative, diacetic acid negative, 1-2 w.b.c. per h.p.f., and 4-6 r.b.c. per h.p.f., and rare hyalin cast seen.

Blood count showed 3.8 red cells, 81% hemoglobin, 11,100 white cells, 73% polys, 1% eosinophils, 1% basophils, 16% lymphs, 9% monos, 1% reticulocytes. Six days later the red count was 3,980,000, hemoglobin 82%, white count 8,400, 69% polys, 24% lymphs, 7% monos. Eleven days later the red count was 4,320,000, hemoglobin 88%, white count 5,750, 75% polys, 2% eosinophils, 14% lymphs, 9% monos. Blood cultures were negative. Sedimen-

tation rate was 26 mm. in one hour. Routine agglutinations were negative. Second blood culture was negative. Electrocardiogram done on March 25, 1942 showed auricular rate of 100, ventricular rate of 100, P.R. interval .16, Q.R.S. interval .06, lead I convex ST with a negative T, lead II convex ST with a negative T, lead III deep Q, convex ST and a flat T, lead IV elevated ST and a negative T. The conclusion was convex ST with negative T changes means pericarditis.

On fluoroscopy the transverse diameter of the heart measured 6.3 cm. and the transverse of the thorax 34.4 cm. The cardiothoracic ratio was 50%. The transverse of the great vessels 6.2 cm. There was slight enlargement of the heart toward the left with predominance of the left auricle and ventricle. There was very forceful pulsation of the auricles and ventricles and a thrust like pulsation of the aortic knob upward toward the left suggesting the arteriosclerotic type. There was a moderate lower left pleural effusion well posterior extending over the left diaphragm and upward to the 8th rib near the mid axillary line, but mostly the density was adjacent to the posterior axillary line. There was no parenchymatous tuberculous lesion noted in the upper lung. There was slight mottling of the lower hyalin and trunk markings with prominence of the left interlobar pleura. Conclusion: no evidence of pericardial effusion or a definite thickening of the pericardium at this time, small left posterior pleural effusion which could well be the residual or revised pneumonia. Re-examination of the chest five days later showed less lower left pleural effusion with excellent pulsation of the auricles, ventricles and aorta and pulmonary blood vessels. Improvement was suggested with no pericardial effusion seen. Repeat examination of the chest eight days later, re-examination with posterior-anterior view, left lateral fluoroscopy showed pleural effusion, probably little less than on previous examination. Pulsation of the heart and aorta was not limited.

The patient was admitted on March 24, 1942 and on March 27, 1942 the following progress note was made: "Temperature down to practically normal yesterday, patient looks and feels better, less cough, very little precordial pain. Examination of heart reveals a pericardial friction rub which, widely audible over the whole precordium three days ago, is now heard only faintly over the 4th intercostal space just to the left of the sternum. Heart sounds elsewhere are normal. Lungs: sign of fluid in the left base still present, perhaps somewhat less than before."

March 31, 1942 there was an ENT consultation which showed the nose with the recovering stage of nasal membrane, dry and with crust formation. Pharynx and tonsils clear at this examination. There was no active treatment recommended at this time. Seen by Dr. Peter N. Pastore. The patient was discharged on April 2, 1942.

This patient has been under observation since the time of discharge and there has been no residual or recurrence of this manifestation of pericardial disease.

Case II:

This 20 year old white female was admitted to the Medical College of Virginia Hospital with a history of being well until two weeks ago at which time she developed an upper respiratory infection. Shortly afterwards she suddenly developed an acute oppressing pain in her chest which did not increase or decrease on respirations. The pain radiated to the left side of the neck and down the left arm. There was a tachycardia and some fever. Systems review was essentially negative except for some urinary frequency and a history of occasional hematuria.

Past history: usual childhood diseases, no other serious illness, operations or injuries. Family history: mother and father both died very young, father from flu in 1918, cause of mother's death was questionable. There were five brothers and sisters, all living and well. No familial disease elicited. Social history non-contributory.

Physical examination: Blood pressure 125/75, pulse 100, respirations 20, temperature 99.2°. The patient was a well developed, well nourished, white female lying in bed, appeared quite active for her condition and in no distress, except for an ache in her left arm. She was mentally alert and cooperative. Head and neck were essentially normal. The ENT were essentially normal. Chest expansion was equal and bilateral, clear to auscultation and percussion. Heart: PMI was inside the mid clavicular line at the 5th intercostal space, sounds of rather poor quality, rhythm regular, there were no murmurs. The A2 appeared greater than the P2. The abdomen was soft, moderately obese, no spasm, masses or tenderness, no organs palpable. Extremities were essentially negative. Rectal and pelvic exams were noncontributory. No lymphadenopathy noted. Urinaly-

sis on admission showed urine to be straw colored, reaction acid, specific gravity 1.006, albumin was negative, sugar negative and acetone negative. There were 10-12 w.b.c. per h.p.f. and 0-1 r.b.c. per h.p.f. There were frequent epithelial cells seen.

Blood count showed 4,570,000 red cells, 84% hemoglobin, 7,200 white cells, 75% polys, 2% eosinophils, 21% lymphs, 2% monos. Blood count seven days later showed red count to be 4,470,000, hemoglobin 88%, white count 8,200, polys 68%, eosinophils 10%, lymphs 20%, monos 2%. Four blood cultures done respectively on 9-9, 9-13, 9-16, and 9-23 were negative.

Chest showed cardiothoracic ratio of 44%. The heart was slightly mitral in type with slight prominence of both auricles. The lungs were clear. Sed. rate on 9-11 was 27, 9-16 was 25, 9-17 was 27, 9-27 was 28. Electrocardiogram done on 9-9 showed auricular rate of 88, ventricular rate 88, rhythm regular, P.R. interval .16, Q.R.S. .06, lead I, convex ST negative T, lead II, convex ST negative T, lead III, low R convex ST negative T, lead IV, convex ST negative T. Conclusion: convex ST and T changes suggest pericarditis.

Basal metabolism done on 9-25-46 was minus 10. The patient ran a low grade fever between 99° and 99.5° until day before discharge from the hospital. Progress note made on 9-20, "EKG changes not differing a great deal from previous tracings. All would suggest acute pericarditis". Progress note on 9-27, "Patient called tonight complaining of pain in arm and pericardium. Exam revealed a very frightened and apprehensive female. The heart rate was 76, rhythm regular, sounds of good quality. The patient was reassured and there was no further trouble."

The patient was discharged on 9-30, after twenty-two days of hospitalization, temperature was normal and there was no further pain noted. The patient has had no repeats of this episode during the past four years. Present state of health good.

CASE III;

This twenty-one year old white male was well until two months before admission to the Veteran's Administration Hospital at which time he developed a "tired" feeling throughout the anterior chest. Several hours later he was awakened by crushing, severe pain beneath the sternum with radiation to both shoulders. This was relieved to a slight degree by a forward bowing of the shoulders. The patient was hospitalized twenty-four hours later and remained in the hospital for one week, gradually improving symptomatically. Following his discharge and up until the time of his second admission, he had a feeling of fullness in the anterior chest with occasional sharp shooting pains along the lower rib margin anteriorly, relieved by belching. Two weeks prior to admission he noticed a soreness across the mid back on arising in the morning. There had been no chills or fever and no less appetite although he claims to have lost fourteen pounds during the two month period of the above symptoms.

Physical examination on admission was essentially negative except for a temperature of 101 degree. The lungs were clear. The blood pressure was 115/60. There was a short, blowing systolic murmur in the pulmonic area. The rhythm was normal and no friction rubs were heard. There was slight tenderness in the right upper quadrant and the liver was barely palpable.

Laboratory data on admission showed a urinalysis, Kahn, icteric index, a total and one minute serum bilirubin, cholesterol and cholesterol esters, flocculation tests, all within normal limits. There was a moderate leukocytosis. The electrocardiogram revealed a sinus arrhythmia. In Lead I there was a moderate W-shaped QRS and a low T wave; in Lead II there was a low T wave; and Lead III showed an inverted T. CF II revealed a right side pattern and CF IV and CF V showed low T waves. A second electrocardiogram taken ten days later showed a regular rhythm, Lead I had a small R and a small S and a low T, Lead II showed a low T with a questionable diaphasic T, and there was a low inverted T in Lead III. No left sided pattern was found in the CF leads and the T waves were low.

X-ray revealed a flat plate of the abdomen that was negative; radiographic and fluoroscopic examination of the chest show the left hilum to be somewhat prominent as though the heart were pulled to the left by adhesions. Adhesions were seen between the left diaphragm and the left lungs; the middle segment of the left border of the heart was somewhat prominent and it was felt that this was probably due to the adhesions described above.

The patient's hospital course was uneventful after the second day. Daily blood pressure determinations were normal and the patient was asymptomatic. Examination of his heart and lungs by the cardiovascu-

lar service was found to be normal on several examinations. The patient was discharged on the twelfth hospital day with a diagnosis of a non-specific pericarditis.

Case IV:

This fifty year old colored male was in good health until three weeks prior to admission at which time following a "head and chest cold" the patient developed a sudden sharp pain across his anterior chest, which was aggravated by deep inspiration and seemed to cut his breath off. This was followed by soreness which remained in the left lower anterior chest around the left costal margin. Other than this soreness the patient was relatively comfortable until three days before admission, at which time the pain in his chest became markedly worse and the patient lost his appetite. The patient gave a history of a similar episode two years ago, lasting for approximately one week and since that time he has had two or three similar attacks.

Upon initial examination the patient's temperature was 101 degree and positive findings were noted as follows: The respirations were short and somewhat rapid. There was some dullness and depressed breath sounds over the left base posteriorly and laterally. There were some crackling, inspiratory rales heard at both bases. The heart appeared enlarged to percussion with a regular rhythm and a rate of 126. The remainder of the physical examination was essentially normal.

Laboratory studies on admission showed a hemoglobin of 12.2 grams, a red blood count of 4,500,000, a white blood count of 14,500 with 84% neutrophils, 10% lymphocytes, 4% monocytes, 1% eosiniphils, 1% basophils. The sedimentation rate was 34 mm.

Chest x-ray on admission reported that the lungs were clear, the heart was greatly enlarged both to the right and left. Fluoroscopy of the heart revealed the cardiac shadow to be greatly enlarged, both to the right and left, with some posterior displacement of the esophagus. The cardiac pulsations were markedly reduced. Repeat chest x-ray twenty-four days after admission showed the lungs to be normal. X-ray and fluoroscopic examination of the heart showed the transverse cardiac diameter now to be slightly above 50%. No particular chambers seemed to be enlarged and pulsations were normal.

Electrocardiograms taken shortly after admission revealed a sinus tachycardia, left axis deviation, inverted T wave in Lead I and II. Recheck five days later showed T1 and T2 to be low. A third check was done with the use of unipolar leads with no abnormalities being noted. The patient ran a moderate degree of fever, which slowly came to normal over a period of several weeks, and the patient was discharged from the hospital thirty-four days after admission, asymptomatic.

Case V:

This thirty-three year old white male was admitted to the hospital because of the onset of mild aching pain in the epigastrium and lower chest radiating to both shoulders three weeks previously. The pains were inconstant and not related to meal. The symptoms continued and twelve days later he passed a tarry stool. Two days following this he was awakened by a severe sharp pain in both lateral costal areas and a severe gripping pain in the epigastrium, causing him to vomit. Since that time and up until the time of admission he had noted a sharp pain in the left lower anterior chest, accentuated by deep breathing or movement.

Physical examination on admission showed the patient to have a temperature of 102 degrees. There was soreness to touch of the anterior chest. There was a systolic friction rub heard over the fifth intercostal space just to the left of the sternum. The remainder of the physical examination was essentially normal.

Laboratory studies revealed a hemoglobin of 14.7 grams, white cell count of 9,400 with 76% neutrophils, 22% lymphocytes, 2% monocytes. The sedimentation rate was thirty-four mm. X-ray of the chest revealed the heart and lungs to be within normal limits.

The electrocardiogram on admission showed the following change: a flat ST 1 with an inverted T1; a slightly elevated ST 2 and a diaphasic T2; a low voltage QRS 3 with a small T3. There was T wave inversion in CF2, 4 and 5. It was thought that the ST and T changes were compatible with acute pericardial disease, and four days later a second tracing revealed an inverted T1 and T2, a low T3 and a small Q 3, and the chest leads showed a depressed ST and CF 5, and an inverted T in CF 2, 4 and 5. The third tracing made twelve days later showed an inverted T1, T2, and T3, a small Q3, and an inverted T V4 and V5.

The patient's hospital course was essentially un-

eventful. He ran a fever for the first two days of admission but none thereafter. He was treated with bed rest and shortly after admission became asymptomatic and remained so, being discharged fourteen days after admission.

CASE VI:

This fifty-five year old white male was well until three weeks before admission at which time he developed an upper respiratory infection and a cough, productive of a yellow sputum. Three days before admission the patient noted a severe crushing precordial pain with soreness, but no radiation. The pain became more marked on walking or attempting any form of movement. It was not affected by eating or deep inspiration. The patient's appetite became poor and he was unable to sleep.

The temperature on admission was 102 degrees. The pharynx was injected. The heart sounds appeared to be somewhat distant in quality. P2 was greater than A2 and there was a to and fro grating rub heard over the sternum and to the left of the sternum in the third intercostal space. The blood pressure was 124/90.

White count on admission was 6,500 with 79% neutrophils. The sedimentation rate was thirty-five mm.

Electrocardiogram on admission showed a questionable low T1, 2 and 4.

X-ray showed an increase in the transverse diameter of both sides of the heart. The anterior mediastinum was widened. There was no evidence of a pericardial effusion.

The patient remained in the hospital for fifty-two days. During that time he developed T wave inversion in Leads I, II, and IV on the fourth hospital day, and these subsequently returned to normal during his hospitalization.

On the sixth hospital day there was some left ventricular enlargement noted by x-ray. On the thirty-first hospital day fluoroscopic examination of the heart was normal. The patient gradually improved and at the end of the fifty-two days was discharged, asymptomatic.

CASE VII:

Ten days prior to admission this forty-nine year old white male developed a dull, non-migratory pain in the left shoulder while sitting in the barber chair. The pain penetrated inward from the outer portion of the shoulder into the clavicle and continued for twenty-four hours, being associated with drowsiness. The pain then changed in nature becoming a sticking type radiating from the left scapula to the right scapula and was severe enough to confine him to bed. The following day an electrocardiogram was taken and reported to be normal and with the use of sedation he became fairly comfortable although he developed a moderate degree of anorexia. Nine days following the initial attack he developed a fever of 101 degrees and the pain became a dull persistent sticking type just beneath the clavicle bilaterally, but more severe on the left and accentuated by deep inspiration. He was then hospitalized at a private institution for six days, during which time he received anticoagulant therapy, penicillin and sedation. He showed no improvement during this time and upon request was transferred to the Veteran's Administration Hospital.

On admission he was found to have a fever of 99 degrees, which went up to 103 on the second hospital day, but by the fifth hospital day it had returned to normal. The pulse varied between 80 and 100, and respirations were between 20 and 25. The blood pressure was within normal limits.

The white blood count showed 10,800 white cells with 80% polys; on the third hospital day it was 10,550 with 86% polys and on the eighth hospital day it was 9,700. On the day of discharge the patient had a normal white count with a normal differential. Sedimentation rate on admission was twenty, gradually increased to thirty-six, and by the time of discharge had returned to normal.

The electrocardiogram showed an increased amplitude of the QRS complexes and inversion of T1, T2, CF 4 and 5. These changes persisted until discharge.

X-ray of the chest was interpreted as suggesting a pericardial effusion on the first day. Ten days later x-ray and fluoroscopic examination suggested some left ventricular enlargement though no effusion was found at this time.

At no time during the hospital stay were any abnormal physical findings noted in the lungs or the heart.

The patient was discharged from the hospital on the twelfth hospital day, asymptomatic; however, during this time his electrocardiogram had not returned to normal.

Case VIII:

This 50 year old colored female had been well until approximately twenty days before hospital admission at which time she began to have upper respiratory infection with much cough. A week after the onset of these symptoms the patient noted a severe aching pain involving the entire left chest and at times, the back of the neck. Respiratory movement accentuated the pain. A week after onset she was seen by her local physician who noted that she had a fair degree of breathlessness. The pain seemed to be of a moderate, intermittent nature until the day of hospital admission, at which time she experienced a severe attack of left chest pain which was of an aching character, and it did not radiate but remained chiefly in the precordial area; it was constant and not paroxysmal. This seemed to be somewhat relieved by rest.

Physical examination on admission revealed a blood pressure of 110/90, a pulse of 80, respiration of 26 and temperature 100.2° rectally. The lungs were of normal resonance; the breath sounds appeared louder and more distinct on the left, anteriorly, with an occasional moist rale over the left base. The heart was not enlarged. The cardiac sounds were of good force and regular; no murmurs were heard. There was a coarse grating sound to the right of the sternum at the third intercostal space; it was very difficult to time. Extremities: There was a 1 plus pitting oedema of the ankles.

The day after admission the patient persisted with a definite friction rub just to the left of the sternum in the third intercostal space. The electrocardiogram showed an elevated ST1, ST V4 and ST V5. There were no Q waves. At this time the clinical picture was somewhat suggestive of coronary occlusion; however, pericarditis could not be ruled out. On the twelfth hospital day the patient experienced knife like, sticking pains just below the left breast; a cough developed with a feeling of substernal pressure.

A chest plate at this time revealed a type of leather bottle heart which on fluoroscopic examination seemed to be a pericardial effusion. The friction rub had disappeared at this time and a pericardial tap was attempted. Grossly bloody fluid was obtained, dark in color. The fourteenth hospital day a second pericardial tap was done, with 10 CC. of bloody fluid removed and a small amount of air injected.

At this time there was an elevated ST in leads I and II and VR4 and 5, which were indicative of pericarditis. However, in VR4 there was a small Q and in VR5 there was a small Q which made it difficult to rule out absolutely, an associated myocardial infarction. However, the character of the pericardial fluid made this very doubtful: The twenty-second hospital day the patient continued to complain of some precordial dull pain but there was no change in heart sounds and no rub was heard. On the thirty-second hospital day the patient was completely free of symptoms. the heart sounds were normal. At that time there were abnormal T changes in all the leads of her electrocardiogram, of an indeterminate nature.

A moderate leukocytosis up to 13 thousand remained until the nineteenth hospital day.

The patient was last seen five months after hospital discharge; she was asymptomatic, the electrocardiogram had returned to normal and the patient was performing her usual duties.

It was our impression that this was a case of non-specific idiopathic pericarditis. Cultures done on the fluid removed from the pericardial space were negative for any growth and on smears no organisms could be found.

Case IX:

This 45 year old white male was admitted to the hospital following an attack of "indigestion" occurring shortly after the evening meal. That afternoon, the patient suddenly developed a "squeezing" type of precordial pain, which gradually subsided. Following his attack after supper, he was seen by his local physician who discovered a peri-cardial friction rub on examination and recommended hospitalization.

Seven years previously, the patient was diagnosed as having a coronary occlusion, and was treated at home with six weeks bed rest. From that time until the onset of the present illness, the patient has had no cardiovascular symptoms.

Physical examination on admission revealed a well developed, well nourished, white male, in no acute distress.

Blood pressure 120/70, pulse 80, respiration 18, temperature 99.6.

The remainder of the physical examination was entirely negative, except for a friction rub heard best at the apex of the heart.

Laboratory findings on admission were within nor-

mal limits except for a white count of 10,400.

X-ray of the chest was reported to be within normal limits.

Electrocardiogram on admission showed only low T waves in Leads I and VI.

Hospital course: The patient was treated symptomatically with sedation, vasodilators and analgesics, as necessary. During his hospitalization, the pulse and blood pressure did not vary to any remarkable degree. Repeated sedimentation rates and white counts were within normal limits, all during hospitalization. He developed, however, T wave inversion in AVL, V2, and V3, which persisted throughout his hospital stay.

Two days after admission, the patient became asymptomatic and the friction rub heard on admission disappeared. He remained asymptomatic during the remainder of the hospitalization of 30 days.

CASE X:

This 41 year old white male was well until ten days prior to examination, at which time he developed an upper respiratory infection with nasal congestion and an intermittent, but persistent, cough. The symptoms were not severe enough to cause the patient to cease his work; however, on the day of examination he began to feel a tightness in the center of his chest. He stopped his usual work early and attempted to return to his home. The central pain became more severe and the patient began to experience dyspnea; he was unable to take a deep breath for it increased the pain. There was no radiation of the pain, it seemed to localize substernally.

On physical examination his temperature was found to be 100° orally, his blood pressure 128/76 and pulse 98. The chest was clear as to auscultation and percussion. The heart sounds were distant. There were no friction rubs heard.

During the patient's hospital course he ran a low grade oral temperature and continued to experience substernal pain without any radiation. Movement seemed to make the pain more severe and deep breathing definitely seemed to affect the pain. On the sixth hospital day a loud pericardial friction rub was found in the fourth intercostal space at the parasternal line. The chest was clear. The electrocardiogram at this time showed a small Q2, a slightly elevated ST2 and an upright T2; there was a small Q3, a low T3 and an elevated ST3.

The heart shadow appeared definitely enlarged and the mediastinal shadow broad, suggesting some fluid in the pericardial space in addition to an enlarged heart. The lungs were clear. A pericardial tap was done and no fluid was recovered; this procedure was repeated with moderate saline washing being done and the material collected for culture. There was no great amount of fluid obtained at this time.

Pericardial friction rubs persisted until the 19th hospital day. The patient was being treated with penicillin and the temperature fell by crisis on the 14th hospital day. Following the 19th hospital day, the patient continued to improve with only occasional substernal pain of the non-radiating type, frequently affected by respiration. On the 28th hospital day the patient was allowed up and about, with no discomfort, and was discharged from the hospital on the 31st hospital day, feeling well and with only occasional discomfort over the pericardium on deep inspiration.

The culture of the pericardial washing revealed a hemolytic streptococci present in pure culture. This was confirmed by a second report, a culture of sediment showing a hemolytic streptococci present.

In view of the clinical picture presented, supported by the electrocardiographic changes, it was impressioned that this patient had a streptococcic pericarditis, secondary to a severe upper respiratory infection.

This patient was last seen four months after hospital discharge. The electrocardiogram was essentially normal. All laboratory studies were normal. The patient was doing full time office work.

COMMENT: Nine cases of acute infectious idiopathic pericarditis have been presented. The tenth case represents the same clinical entity, however, due to unusual circumstances, the causative agent was found. We believe if such procedures were carried out more often the term, "idiopathic", would have to be used less often. However, we certainly do not recommend routine pericardial taps in such cases.

We wish to express our thanks to Dr. Louis Calisch for his assistance in summarizing some of the cases.

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Professional Building.

Dr. Wellford Reed, Richmond: I want to thank Dr. Camp and Dr. Clarke for bringing to our attention this very important problem in differential diagnosis.

In October, 1948, Logue and Wendkos, in the *American Heart Journal,* analyzed 40 cases of pericarditis and found 15 of them non-specific and 15 associated with rheumatic fever. The rest were tuberculous, associated with disseminated lupus, rheumatoid arthritis, trauma or neoplasms. This is important, because from the onset we see that the large majority of cases of pericarditis are non-specific, and it is possible that we miss many cases associated with upper respiratory infections. I believe it is much more difficult to make this diagnosis than that of myocardial infarction.

Regarding pain, this is usually due to involvement of the pleura or the diaphragmatic reflection of the pericardium with reference of the discomfort to the left shoulder or neck. It is of interest that some cases show relief of pain with increased accumulation of pericardial fluid. Some have a crushing type of pain, similar to that which occurs in coronary occlusion.

There is a much more difficult type of case to diagnose, which presents the typical substernal pain; but the patient has no fever, the pain subsides rather promptly, there is no elevation of leukocytes, and the electrocardiogram shows only inversion of T1 and T4 without QRS changes. These individuals usually recover so we have no post mortem studies to parallel our clinical studies and are not quite sure of what is going on within the heart structure.

As Dr. Camp stated, unless we make frequent diagnostic taps we shall diagnose an increasing number of cases as idiopathic pericarditis. On the other hand, where there is little fluid, we shouldn't risk making a bloody tap, which would confuse the picture. In my experience bloody fluid is more frequently associated with tuberculosis or malignancy. In both conditions fluid will accumulate very rapidly. This is not the case in non-specific pericarditis, when once the fluid is removed the patient usually begins to improve. We have seen one case in which the patient was relieved by the administration of aspirin only; the temperature came down, and the pain, which had been rather severe, was relieved in 24 hours. There are some things which make us feel this may be a rheumatic-fever type of disease.

Two cases seen within the last two years emphasize a little different slant on the differential diagnosis; that is, trying to differentiate pericardial disease from congestive heart failure. We saw two cases over sixty years of age, both women, and both of whom came to the hospital complaining of shortness of breath. They had abnormal electrocardiograms, neither of any specific pattern. While we were puzzling as to what it meant, a friction rub came to the rescue in both cases, and we made more extensive studies and found that both were suffering from pericarditis and had a previous history of upper respiratory infection. One thing that puzzled us was the fever, which we could not explain on the basis of heart failure alone. The conclusion from the X-ray report was that there was marked hypertrophy of the heart with passive congestion and a small amount of fluid. We removed the fluid from the left pleura, we thought; and an X-ray taken about four days later showed the heart shadow smaller, and no evidence of pleural effusion. Then we concluded that this was a pericarditis and not congestive heart failure. The second case had a similar report, which worried us as well as the X-ray man. The heart shadow was quite large. When a friction rub came along seventeen days later, we decided we were probably dealing with a pericardial effusion. Later she began to cough up a lot of sputum just loaded with acid-fast bacilli. Her effusion disappeared spontaneously before streptomycin therapy was started and we felt that she probably had a non-specific pericarditis in spite of the laboratory findings.

Chairman Outland: The general discussion of these three papers will be opened by Dr. Oscar Clarke, who is co-author with Dr. Camp of the third paper.

Dr. Oscar Clarke, Richmond: More than in the manner of discussion I wanted to re-emphasize the point Dr. Camp made as to how essential the electrocardiographic opinion is in making the diagnosis between idiopathic or acute infectious pericarditis and coronary occlusion. This is rather technical, and I hope you will bear with me as I read it. (Dr. Clarke read several pages from Dr. Camp's paper.)

Chairman Outland: The floor is open now for general discussion of these three papers.

A Member: Mr. Chairman, I should like to ask Dr. Porter whether the preference is for whole blood or plasma in the type of shock he discussed.

A MEMBER: I should like to ask whether, after the administration of blood in coronary shock, it might be necessary to institute bleeding, because actually there has been no blood loss. When the patient comes out of shock is it necessary to bleed him?

CHAIRMAN OUTLAND: Are there other questions or discussions?

DR. —— MOSELEY, ——, Florida: This has certainly been a most excellent symposium, one from which I think everyone has learned something and one which puts us on our toes and will make us try to do better.

I have been using intravenous fluids for ten or fifteen years in what we might call dying cases. Dr. Horsley felt that you could not hurt a patient nor his heart if he were in shock and you gave fluid; and his opinion was this—to give it, and give it rapidly, and stop at the right time. Now, that is the question—when to give it, how much to give, and when to stop. Those are three $64 questions.

The point comes up in this way. Suppose you are in the hospital and you have a patient that has had a heart attack in one or the other end of the hospital. When you go there the patient is in shock and you become excited, maybe or maybe not. You had better not, because it is hard on the patient if you do. You look the patient over; the nurses are running; alarms are sounded; and maybe you become a little alarmed. The best thing to do is to walk up to the other end of the hall. By the time you return the patient is either better or coming out of shock or maybe is dead. Look at him again and go away. Then maybe on your third look at him the pulse is back and his color is better. That is perhaps not very scientific medicine.

Then you decide to give intravenous fluids. The room is cold; the patient is cold; you do not know how to find a vein. Well, maybe you have the surgeon cut down on the vein. Give that fluid and give it fast, and when the pulse comes back stop the fluid. Give no more fluid than necessary to maintain the pulse with the needle in the vein, a large one if you can get it in. Then observe the patient again. The more you observe these people the better judgment you will have.

It has happened twice in the last two weeks that technicians have gone to get blood in people that had no veins. In one case of shock they could not get a vein. This is something everybody knows but that lots of times they do not remember. It is simply this; put a hot-water bottle on the arm you are going to use and let it stay there a while, or put on several, maybe. Then go back a little later and pull the arm down and you will see the vein. The vein is rather shy in these people; it seems to run away. Then irritate the skin. I believe it is a reflex mechanism. But if you have that arm warm you will find the vein and be able to get in the fluid, and in this way I believe you will be able to save more coronaries than in any other way I know.

DR. E. E. HADDOCK, Richmond: Inasmuch as the tenth case Dr. Camp reported on a while ago was referred to him by me, I have a few remarks I should like to make about it, which may be of more value to general practitioners than to internists. The first is as to the matter of making the diagnosis. In rural Districts hospitals are not always available and electrocardiographic machines are not available, and it is very difficult oftentimes to make a diagnosis. I have to take off my hat to the man who made the diagnosis. It happened on an afternoon when I was off, and the family called a C. and P. doctor. He happened to be a young internist, Dr. Adney Sutphin, of Richmond. He took his portable machine with him up to the man's home, and made the tracing right there and told the family it was pericarditis.

The proper diagnosis is important particularly because of the long-range advice you want to give the patient. If this man had had coronary occlusion with myocarditis it would have changed his future life entirely. This man's job is that of field engineer for the telephone company, and in field work he has to go out with crews and go down valleys and up hills and so forth. If he had had myocarditis it would have changed his life entirely.

As Dr. Camp said, many cases of idiopathic pericarditis would not have been labeled so if taps had been made on them. But since the patients get along all right we maybe save the patient a lot of psychic trauma by not doing it.

A MEMBER: I should like to ask if Dr. Beckwith would care to comment on Linck's (?) suggestion that we use large doses of vitamin C in conjunction with dicumarol therapy.

DR. BECHWITH, closing the discussion on his part: First I want to thank Dr. Camp for his discussion.

We have not had any experience at all in the use of vitamin C with dicumarol. I understand it does enhance the value of dicumarol, but that is all I know about it.

I also want to state that I enjoyed the other two papers in this symposium very much. We have recently had a few cases of pericarditis, and I want to emphasize the differential diagnosis between pericarditis and myocardial infarction. It is often very difficult to make.

CHAIRMAN OUTLAND: Dr. Porter, will you close the discussion on your paper?

DR. PORTER, closing the discussion on his part: I appreciate very much the discussion of my paper by Dr. Beckwith and the comments made by other physicians. I enjoyed Dr. Beckwith's paper on anticoagulants very much. Because he covered the subject in his paper and because of time limitations, I said very little about anticoagulants. I would like to mention, however, that in our series of cases no embolic phenomena occurred in those patients having adequate amounts of anticoagulants and that the ten cases of embolus noted occurred in patients who had no or inadequate anticoagulant therapy.

I should like to comment on the point Dr. Camp brought out on the use of longer-acting heparin, as, for example, the depo-heparin now available. When dicumarol is used, the patients must be followed closely by tests of the prothrombin activity. This is a long and complicated test which can be carried out only in a hospital laboratory. For this reason only those patients who are in a hospital

could be treated in the past with anticoagulant therapy. With the use of prolonged-acting heparin, it seems probable that patients can be treated with this anticoagulant in the home. This therapy is managed by means of coagulation time determinations, which is a relatively simple procedure and can be done by the physician in the home.

As to the danger of giving too much blood, we are of the opinion that that is a very real hazard and should certainly be avoided. We watch the patient very closely when giving blood or plasma and if there is any sign of embarrassment to the heart, this is discontinued. So far we have had no untoward reactions from such therapy, principally because we are very careful about giving it. The choice of blood or plasma depends upon the hematocrit. If the hematocrit shows hemoconcentration, we use plasma; otherwise we use blood.

I would like to comment on Dr. Chapman's remarks on when to use blood or plasma transfusions. We do it routinely when the patients are in shock and continue until their blood pressure has been raised about shock levels. It may be that in the future such therapy will be given even though the blood pressure does not approach shock levels. If a patient's coronary circulation is accustomed to a blood pressure of 140 or 160 and his pressure drops 20 mm., it is reasonable to assume that the coronary circulation is not as adequate due to the lowering of the effective head of pressure at the coronary orifices. There may come a time when we will give a transfusion to a patient whose blood pressure has dropped only 20 mm. of mercury in order to maintain an adequate coronary circulation with a consequent improvement in the collateral circulation and, perhaps, a reduction in the size of the area of infarction.

Dr. Camp, closing the discussion on his part: I want to thank Dr. Reed and Dr. Clarke and Dr. Haddock for their discussion of my paper.

There is one point I want to add to Dr. Porter's paper. I think it is quite important to prevent shock and to treat it immediately when it does occur. I think in a number of cases plasma followed by saline will increase blood volume more than plasma alone. Certainly I have learned to fear the severe renal failure which comes on and the resulting uremia more than almost anything else in acute coronary occlusion. Maybe I have just had a run recently of bad cases. I do not know.

As to the result of putting fluid in cardiacs, I think if people are in shock and there is any tendency to congestive failure it is better to give the fluids by hypodermoclysis and give five per cent glucose in plain water rather than to give large amounts of saline intravenously, thus perhaps overloading the circulation and producing edema.

A Member: Mr. Chairman, may I make a request? This is one of the most important symposiums I have ever seen, being on a subject in which all doctors are interested and one which tops the list of causes of death. I wonder if this group of papers, along with the comments, could be published together, even in the newspapers, so we could have it and study it. I have listened to it but could not get as much out of it as I wished. There are many excellent suggestions in the papers, and I think they will save lives if we can have them.

Chairman Outland: I think you might relay that suggestion to the Program Committee. All the papers, I am sure, along with the comments, will be published in the official journal of the Medical Society—the Virginia Medical Monthly.

Aureomycin Reduces Childbirth Infection Possibilities.

According to a study on the use of the antibiotic in obstetric patients presented by Dr. Joseph A. Guilbeau, Jr., Dr. Emanuel B. Schoenbach, Isabelle G. Schaub, A.B., and Doris V. Latham, A.B., of the Johns Hopkins School of Medicine and Johns Hopkins Hospital, Baltimore, in June 10 *J.A.M.A.*, aureomycin is effective in lowering the possibilities of infection following childbirth.

The normal uterus after birth contains a wide variety of bacteria which is potentially disease producing. Such infection may result in irreparable damage which can jeopardize future childbearing, the report points out.

Aureomycin hydrochloride was administered to 109 patients before delivery. Only 13 (11.9%) showed positive cultures two to three days after giving birth. In a control series of 24 patients who had uncomplicated, normal deliveries, positive cultures were reported in 18 (75%) cases.

The researchers also treated a number of acute childbirth infections during the study. They report: "Aureomycin proved effective in various obstetric infections. Patients with acute and chronic infections of the urinary tract treated during pregnancy responded satisfactorily to therapy, although several relapsed when treatment was discontinued.

"Aureomycin is a desirable chemotherapeutic agent because it is effective after oral administration, it possesses a wide range of antibacterial activity and it is unassociated with serious toxic manifestations."

The report also points out that the antibiotic has the ability to reach the infant by way of the maternal blood stream in high therapeutic concentration. This, they say, is a desirable property.

PAIN MECHANISMS ASSOCIATED WITH HEADACHE*

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The purpose of this discussion is not to consider the various and many causes of headache but one of considering the specific pain mechanisms that are involved in headaches and pain about the head structures.

It has been estimated that only about five per cent of all cases of headache are actually due to intracranial disease. The remainder are due to disturbances arising from such conditions as neuralgias, vasomotor and circulatory changes, emotional factors and reflex headache from structures outside the cranial cavity. Of these, most workers feel that vasomotor or neurocirculatory disturbances from emotional factors are largely responsible for the complaint of headache.

Much of our understanding of the headache problem has been due to the work of Wolff, Ray, Pfeiffer and their coworkers. Their work has given us much understanding and helpful information to the benefit of both the therapist and the patient. Riley, Brickner, Von Storch, Lennox, Horton and others have also opened up a number of avenues in the treatment of headache, particularly Horton whose interest in histamine sensitivity has done much for the relief of certain types of headache.

When we consider the problem of headaches, head pains and neuralgias, we attempt to link them with discomforts arising from local conditions about the areas. Most often it is difficult to uncover a specific local lesion. On the other hand, understanding some of the mechanisms of production of pain, the points of origin of pain, knowing what structures are sensitive or insensitive to pain and appreciating the areas of referred pains, gives us a much more satisfactory approach and analysis of the problem of diagnosis and treatment.

Knowledge of pain sensitivity of cranial and extra cranial structures is important. The scalp is sensitive to all forms of stimulation just as the skin is elsewhere. The galea in the region around blood vessels is sensitive to pain only. Fascia and muscles are sensitive to pain. The periosteum is only mildly sensitive to pain but in the region of the temporal, occipital and frontal areas it is the most sensitive. The cranial bone itself is insensitive and no pain fibers are distributed to the diploe and emissary veins. On the other hand all of the arteries of the scalp are sensitive to pain, the veins being largely insensitive. Constriction of a scalp artery does not cause pain but stretching in either a lateral or longitudinal manner will cause pain and even nausea and vomiting. Pain arising from this source is often of a throbbing character due to the stretching and relaxation accompanying pulsation. Pressure over the common scalp arteries—superficial temporal, occipital, post auricular, supraorbital, frontal areas and external carotid arteries—sufficient to interfere with circulation over the areas applied by them is a valuable method of differentiating the mechanism of the pain. Deep pressure over these vessels, usually accompanied by nerves, duplicates the pain, whereas moderate pressure and reduction of blood flow through the vessels will relieve the pain. Frequently there is in the history of these cases an observation by the patient that pressure around the head or over the area of complaint results in comfort and is a means of relief.

The main arteries of the dura are all very sensitive to stretching or distention. In migraine, fever, hypertension, and after histamine or from emotional stresses, distention is present and often relieved by constricting ability of ergotamine. Practically all headaches arising from intracranial arteries arise from mechanical alterations of artery tonus. Injecting the arteries with local anesthetic, ligating or severing the arteries will eliminate pain when these structures are stimulated after such procedures. Pain fibers apparently accompany these vessels and are distributed with the arteries. In the area of supply by the anterior meningeal area to the anterior fossa, alterations of tonus of the muscle of the artery wall by stretch, distention or pressure will cause pain in the forehead and eye on the same side. The posterior meningeal arteries are distributed to the under surface of the tentorium and the meninges below the tentorium. Pain from these structures is referred to the region of the occiput. The middle meningeal artery supplies all of the dura above the tentorium except for the floor of the anterior fossa and the

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

dura over the tip of the frontal lobes. Pain arising from the middle meningeal artery causes pain referral deep in the temporal-parietal region and behind the homolateral eye. The small branches of the middle meningeal differ from those of the anterior and posterior meningeals in that pain fibers accompany the small branches of the middle meningeal to the extreme terminations and pain may remain at the point of stimulation and not be referred.

The dura apart from the pain sensitive fibers along an artery is insensitive to pain except at the base where there is considerable sensitivity. In the anterior fossa the dura is sensitive and causes pain behind or about the homolateral eye. The dura of the middle cerebral fossa is quite insensitive but the posterior fossa dura is very sensitive along the floor and along the margins of the occipital and transverse sinuses. Pain is referred from these regions to the area behind the homolateral ear and the back of the head.

There is very little sensitivity of the dura of the falx cerebri but the superior sagittal sinus is sensitive and refers pain to the homolateral side and homolateral eye. The superior surface of the tentorium is sensitive and pain is referred to the homolateral forehead and eye region. Pressure from the under surface of the tentorium will cause pain referral to the same region.

The main veins near the point of their entry into the transverse and superior petrosal sinus, under the surface of the temporal lobe, are sensitive and pain is referred to the temporal region. The occipital sinus is very sensitive with pain referred to the region behind the left ear and low in the back of the head and neck region. Local injection of the upper three cervical nerves will relieve pain from these structures.

In the substance of the brain itself, the blood vessels are insensitive except for the basal blood vessels. Pressure, distention or stretch of these basal vessels cause deep, dull, diffuse headache, usually of a pulsating character and the headache is frequently accompanied by nausea. The intracranial segment of the internal carotid artery will refer pain behind the eye and low temporal region whereas the basal portion of the anterior cerebral will cause pain behind and above the homolateral eye. The vertebral artery refers pain to the occipital and suboccipital regions and the posterior inferior cerebellar artery, one that commonly thromboses, causes pain in the same region.

The actual neural pathways of the pain sensitive structures are divided according to location in regard to the tentorium. The fifth cranial nerve supplies the superior surface of the tentorium and all of the structures lying above it while the structures lying on the under surface of the tentorium or below it are supplied by the 9th, 10th and to a lesser extent the 11th, 12th and upper cervical nerves.

The pathological physiology of headache is based on disturbances of the hydrodynamic mechanisms within the head. The pain-sensitive structures of the meninges, tentorium, falx, and those distributed with the cranial vessels can be interfered with mechanically by tumors, abscesses, toxins, states of vasodilation, vasoconstriction or compression. Increased pulsations and blood excursions occur in migraine and in hypertension. Headache with increased or decreased intracranial pressure comes from traction or displacement of pain sensitive structures and does not depend upon generalized increased intracranial pressure. Traction on veins emptying into the sinuses and traction on the middle meningeal artery by extradural or subdural hematomas or abscesses accounts for headache in such conditions rather than increase of pressure. Displacement and traction on the large basal arteries cause generalized types of headache, just as inflammations at the base of the brain and over the convexity of the brain.

Cranial nerve neuralgias are frequently causes of headache and head pain. The most frequent neuralgias are those associated with the trigeminal nerve. Other neuralgias are less common but frequently involve the occipital and great occipital nerves.

Many facial neuralgias do not follow the patterns of the cranial nerve distributions. Neuralgias of the facial, glossopharyngeal, vidian, sphenopalatine and geniculate nerves are less common but vasomotor disturbances of the vessels of these nerves are important factors in atypical neuralgias and facial discomforts. Many individuals suffering from these painful afflictions show evidences of cardiovascular disorders, hypertension, arteriosclerosis or tremendous arterial lability and many have migraine or a family history of migraine. Many also have neuralgic pains in the brachial and lumbosacral plexuses. Atypical neuralgias are seen more commonly in women, are often bilateral and frequently follow

vascular patterns rather than nerve distributions. Many of these have associated sympathetic disturbances with them such as lacrimation, edema, photophobia, flushing or blanching.

One of the very common forms of headache is that caused by hypertonicity and spasm of the neck muscles. Pain in the head, neck, shoulder, chest or precordium is frequent in cervical arthritis and is aggravated by head and neck movements, coughing, straining or sneezing. Early morning occipital headaches and posterior neck aches are often due to this cause and is very common. Occupations such as bookkeeping, typing and machine operators frequently have complaints arising from cervical spinal arthritic structures. Indurative myalgia, rheumatoid myositis, fibrositis and neuritis also can give similar headache. Asymmetries of the cervical spinal condyles and displaced or subluxated articulations are other causes for such complaints.

Headaches may be referred from a thoracic or abdominal viscera to the superficial tissues of the head through the relation of the trigeminal and the vagus. Three cases seen recently had pain referred to neck and head structures from stomach ulcers and disappeared with successful treatment of the ulcers. In many individuals a common cause of headache is eye-strain probably from reflex nervous mechanisms.

Particular attention is called to the sources of regional headache from intracranial structures. From the illustrations given there are specific areas or regions to which pain is referred about the head. These are the region of the eye and forehead, the temporal and parietal area, the occipital and suboccipital areas. Sources of these regional headaches can be grouped together into the following:

Pain in the eye and forehead region can arise from the anterior meningeal artery, dura of anterior fossa, superior surface of tentorium, transverse, straight and sagittal sinuses, Sylvanian vein, intracranial portion of internal carotid artery, vessels of circle of Willis and proximal portion of larger cerebral branches and the ophthalmic division of the trigeminal nerve.

Temporal region pain is referred from the superficial temporal artery, the middle meningeal arteries, and inferior cerebral veins of the temporal lobe.

Parietal and vertex region pain is referred from the anterior portion of the sagittal sinus and tributary veins.

Pain in the ear is referred from the internal auditory artery and dura surrounding the internal auditory meatus.

Occipital, suboccipital and post-auricular pain is referred from the undersurface of the straight and transverse sinuses, walls of occipital sinus, sigmoid sinus and adjacent dura, pontine and internal auditory artery, dura of the floor of posterior fossa and 9th and 10th cranial nerves.

Occipital and upper cervical pain is referred from posterior meningeal arteries, inferior cerebellar arteries, vertebral and basilar arteries, intracranial portions of the 11th and 12th nerves, 2nd and 3rd cervical nerves.

Pain may be referred to specific regions of the head from sites of origin in other head structures. Pain from teeth can be referred to areas supplied by the fifth or trigeminal nerve. Nasal structures and sinuses likewise can refer pain to head areas, notably frontal, temporal, vertex and also the suboccipital region and neck regions. Deep ocular structures refer pain to the offending eye and forehead region and may spread to side of head, behind the ears and down the neck.

All of these factors must be considered in analyzing a patient's complaint of headache. Careful questioning in obtaining the history will help bring out a specific region referral when the patient is apt to generalize or make light of his complaint and it may help to distinguish his complaint from the so-called nervous or emotional headache where the complaints are more apt to be bizarre and follow no definite pattern and are apt to be relieved by unusual measures.

Summary: The belief at the present time is that the majority of headaches are effected through vascular mechanisms, the pain itself being due to vasodilation, traction, stretch factors and subsequent local anemia or edema after vasoconstriction or rise in intracranial pressure. The vascular mechanisms are under nervous control and reflex action can be initiated from various parts of the body and in excitement and in the emotional states, the latter accounting for the origin of most headaches.

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Discussion

Dr. Thomas N. Spessard, Norfolk: Dr. Klingman has presented in a concise, orderly and scientific fashion, most, if not all, that is known concerning the origin of headaches that are produced by structural intracranial change. I think that his observation that increased intracranial pressure alone does not produce headache, but that the secondary distortion of cerebral structures is the etiological mechanism, is an important contribution to our understanding of this problem. The entire paper was extremely interesting and informative.

Unfortunately, however, known organic mechanisms account for only a fractional number of headache victims. More than 90 per cent fall into the so-called functional group, whose headaches, certainly in the light of our present knowledge, are presumed to be emotionally induced. A functional reaction, of which headache is the most common, develops when an individual is incapable of dealing with the circumstances in his life at a given time. Continual demands beyond the personality's emotional capacity produce a somatic response, perhaps mild and transitory, often severe and lasting. Insecurity, fear, hostility, and resentment, especially if suppressed, are the four horsemen of functional disease, of which headache is the major reaction. The headaches associated with and caused by emotional tension and anxiety are, as a rule, different from the organic variety. They begin usually with what patients describe as a sensation of pressure. The scalp feels tight, as if a band were constricting the skull. They are little influenced by the position of the head, and tend to be more generalized, with some predisposition to the base of the skull. Many are slight, are absent on arising, but grow steadily worse as the day progresses, especially if excessive emotional stress or tension is demanded. Medically, these headaches show some response to ordinary analgesics, but respond more satisfactorily to sedation or environmental change.

I am sure all physicians, whatever the type of work, will agree with Dr. Klingman that the subject of headache is probably the No. 1 medical problem. To those who confronted this problem on the neuropsychiatric wards of military hospitals, headache was *the* headache. It was obvious that these individuals were projecting and converting their dislike of military service into headaches. So we, as civilians, convert our daily worries, resentments and frustrations. That it, she, him or they give us a headache is a daily used expression, all too true.

From Dr. Klingman's paper today, we can see the strides being made in understanding and coping with the mechanism of organic headache. No doubt some progress is also being made in the management of the functional headache. There is also no doubt that, as long as the individual has problems or circumstances which are difficult or impossible of solution, just so long will headaches continue as medicine's No. 1 challenge.

Dr. Klingman, closing the discussion: I wish to thank Dr. Spessard for his remarks emphasizing the tremendous differences between headaches of psychogenic or emotional origin. Time did not permit my entering into the explanation of origins of this kind. It is possible that these headaches may also be explained on the basis of interferences with vascular supply.

I should like to emphasize again that in obtaining histories of headaches you cannot spend too much time in trying to decide in your own mind the characteristics of the headache early in its course. Headaches in a particular region bear special consideration from the organic standpoint, and we must take into consideration the various mechanical factors that could be responsible. We do see headaches that are psychogenic or emotional in origin that express themselves in discomfort in the same regions, but usually a carefully elicited history will bring out the real cause. The persistence, though, of headache in these areas definitely warrants the consideration of an organic condition. It does not necessarily have to be a neoplasm but may be from vascular disturbances or some mechanical or hydrodynamic effects which may themselves be excited by some organic factor.

VAGINAL HYSTERECTOMY—
Indications and Advantages*

JAMES P. HENNESSY, M.D., F.A.C.S.,
New York, N. Y.

Vaginal hysterectomy was one of the very earliest major surgical procedures to be performed. Its history dates back to the second century, when Soranus, the Greek obstetrician who practiced in Alexandria and subsequently in Rome, seems to have originated the idea of removing the uterus through the vagina.

Berengaria de Carpi, early in the sixteenth century, is given the credit for the first authenticated description of the removal of the uterus through the vagina.

We shall not attempt to review the earlier literature on the subject, but in 1882, in this country, Christian Fenger[1] published a detailed description of his first case. In 1915, Charles H. Mayo[2] described an operation designed to correct the vesical deformity accompanying uterine prolapse as well as to remove the uterus. Since Mayo's paper there have been many others from all parts of the world. They have dealt mainly with the technique of the operation devised by Mayo, and, unfortunately, there has been a dearth of follow-up information upon which to base logical conclusions as to the efficiency of any one procedure.

The history of vaginal hysterectomy is one of gradual evolution through successive stages in the development of techniques to overcome several obstacles, namely: (1) to obtain proper exposure of the operative field; (2) to clarify the obscurity of anatomical detail due to a bloody field; (3) to prevent the recurrence of cystocele and enterocele. With the perfection of aseptic surgery abdominal operations have become much safer. Previously the mortality following abdominal surgery was so high that it was done only in cases of great urgency. The mortality after vaginal hysterectomy under comparable conditions is much lower than after abdominal hysterectomy.

In performing the operation three basic principles should be kept in mind. There should be adequate support for the remaining pelvic organs and the vaginal vault by the proper approximation and suturing of the ligamentous structure of the pelvis during the closure of the wound. Raw surfaces should be carefully protected, and adequate drainage should be maintained in all cases.

In my opinion, the indications for this procedure have definite limitations. The uterus must be relatively small (not larger than a three months pregnancy), accessible and movable. The vagina should be large enough to afford room for the operation. Large uterine tumors or inflammatory masses should not be removed through the vagina. This is possible, of course, although exceedingly difficult and accompanied by great trauma and profuse bleeding. If necessary, however, the vagina can be enlarged by a median episiotomy or by a Schuchardt incision.

In properly selected cases, vaginal hysterectomy is an ideal method and saves many lives; if unwisely used, however, it is extremely difficult and adds unnecessary risks to what might be an easy operation if done through an abdominal incision. Each procedure has its field of usefulness.

One of the questions most frequently asked by students is: "What are the indications and advantages of vaginal hysterectomy?" According to the procedure followed in this clinic, the indications are:

1. Procidentia of the uterus of varying degrees associated with rectocele and cystocele (the chief indication);
2. Small benign tumors of the uterus, not larger than a three months pregnancy;
3. Precancerous lesions of the cervix, including erosions, deep lacerations, ectropion or leukoplakia;
4. Persistent functional bleeding, especially in the menopausal period, not responding to hormone therapy;
5. Chronic subinvolution of the uterus.
6. Recurrent uterine polyps or those with potential malignant changes;
7. Persistent uterine leukorrhea, or chronic metritis;

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Presented at the meeting of the Clinical Society of the New York Policlinic Medical School and Hospital, May 1, 1950.

8. Stenosis of the cervix following radium therapy;

9. Carcinoma of the corpus uteri, using radium and x-ray as adjuncts, in cases where abdominal approach is contraindicated;

Its advantages are:

1. Vaginal hysterectomy is an operation associated with a minimum of shock and hemorrhage and with a low morbidity and mortality rate;

2. It is a total hysterectomy, thus qualifying for the advantages of an abdominal total hysterectomy;

3. The vaginal procedure is the method of choice in obese elderly patients and those who are poor surgical risks because of diabetes, cardiac disease, hypertension and nephritis;

4. The potentially infected cervix is removed, thus eliminating a possible focus of persistent cervical discharge and an irritative cause of cancer;

5. There is less danger of infection since the peritoneum is entered at its most dependent point where the tissues are more resistant to infection and where, should infection occur, drainage is more easily established;

6. There is less liability to ileus, due to minimal handling of the intestines, and less danger of bowel perforation. Postoperative adhesions and intestinal obstruction are minimized;

7. Diseased adnexa may be removed if necessary;

8. There is much less postoperative discomfort; nausea, vomiting and gastrointestinal disturbances are less frequent;

9. Peritonization can be accomplished as by the abdominal route;

10. Thrombophlebitis and pulmonary embolism are less common;

11. A moderately deep vagina is assured.

Vaginal hysterectomy is indicated in certain conditions and we should be familiar with these. In some hospitals it is almost a lost procedure and the operation is rarely mentioned. I believe that every gynecologist should be able to perform the operation when it is indicated and not have to resort to other procedures because of his limitations.

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Cortisone Side Effects Reduced by Smaller Dosages.

The development of a dosage of cortisone acetate to maintain improvement in cases of rheumatoid arthritis with a minimum occurrence of undesirable side effects is reported in the September 30 *J.A.M.A.*

Cortisone is not a cure for the disease, but its administration reverses crippling results. Its continued use is necessary in order to prevent the return of the pain and deformities which mark rheumatoid arthritis. The problem of physicians using the drug has been to prevent complications in side effects.

A report on the treatment of 42 patients is made by Dr. Edward W. Boland and Dr. Nathan E. Headley of Los Angeles. Based on preliminary studies, they said it appears that some severe cases and most less severe cases may be kept under adequate clinical control for long periods, and with relative safety, with smaller maintenance doses ranging from 32 to 65 mg. a day provided larger doses to suppress the disease are used initially.

"Comparatively few unfavorable reactions have developed when these small doses have been used continuously for as long as six months," they reported. "So far all adverse effects have been temporary, disappearing on hormone withdrawal or lowering of the dosage."

However, they added: "Only time and further experience will determine the full therapeutic possibilities of cortisone for rheumatoid arthritis. Explorations of its potentialities as a treatment agent are greatly influenced by one fact: The hormone suppresses rheumatic activity but does not cure the underlying disease. Thus, it appears that if antirheumatic effects are to be sustained, cortisone must be given continuously.

"The question as to whether the hormone can be administered safely and effectively for extended periods of many months or years will not be answered positively until there has accumulated greater clinical experience in relation to dosage and methods of administration, greater knowledge regarding its physiologic activities and more information as to the consequences of its prolonged or repeated use."

CLINICAL PATHOLOGICAL CONFERENCE

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE I—PROTOCOL FROM MEDICAL COLLEGE OF VIRGINIA*

Clinical Discussion—J. EDWIN WOOD, JR., M.D.
Presentation of Pathology—G. R. HENNIGAR, M.D.

DR. WOOD:

This patient, a nineteen year old white boy, begins a long illness following a severe automobile injury causing considerable contusion to the head, chest, and abdomen. On the 25th day of this first admission, and following his accident, abdominal swelling, presumably ascites occurred, and responded to rest and diuretic measures. Three weeks later ascites again occurred.

Beginning with this episode his troubles gradually multiplied, culminating in increasing ascites and pleural effusion over the last year of his life, the interval between the original ascites and the final uncontrollable ascites and pleural effusions amounting to about ten years.

Numerous side episodes starting with renal trauma or lower nephron nephrosis and ranging through several pulmonary episodes do not add to or detract from the main issue of recurring ascites and pleural effusion. These and related events catalogue the condition as a circulatory situation.

The distressing episode of mental aberration described in the sixth admission is attributable to lithium administered in the form of a salt substitute which we all used at one time. The toxic properties of this element have been well described elsewhere[1,2] and do not bear directly on the diagnostic problem here.

Were it not for one outstanding feature, the diagnosis of constrictive pericarditis following trauma would at once appeal to all. This has been documented a number of times following non-penetrating chest injury and Warburg[3,4] has noted it on six occasions. The unusual feature here is the large, rather than the usual small heart associated with constrictive pericarditis.

Aside from this discrepancy, recurring ascites and pleural effusion stand as strong indicators of constrictive pericarditis. Other support is found in the repeated improvement from diuretics followed by recurrence of ascites. Also the diminishing total serum protein, particularly diminishing albumin fraction, and finally the electrocardiogram of auricular fibrillation beginning with QRS complexes of reasonably good amplitude progressing to small slurred low voltage complexes. The arrhythmia and the voltage change represent common accompaniments of constrictive pericarditis.[5]

One must, however, consider the other horn of the dilemma, namely the enlargement of the heart and the various murmurs described. The former is important, the latter means little, as systolic murmurs which come and go have little significance and as the one systolic and diastolic combination reported in this case was only temporarily present and could easily have been a pericardial rub. Now as to cardiac size, a consideration of chronic mediastino-pericarditis associated with severe carditis and hypertrophy would be reasonably tenable. Trauma is known to activate rheumatic carditis and this boy had scarlet fever previously. Furthermore, this would account for the systolic and diastolic murmurs at the apex which could be interpreted as murmurs of relative mitral stenosis associated with enormous hypertrophy. This fits less well with the recurring ascites and pleural effusion and the generally slow clinical progression. Ordinarily, activated rheumatic carditis would conclude itself more promptly following the original accident. The electrocardiogram might well be different possibly showing left ventricular strain.

One third consideration can be discussed briefly, namely the traumatic injury to the myocardium equivalent to infarction as described by Bright and Beck[6] later associated with cardiac dilatation and failure. Cases of this type have a relatively brief outlook, and rarely present the ascites and pleural effusion syndrome.

How can the differentation be made then between

*Discussion of cases preserted before the Medical Society of Virginia at Roanoke, October 9, 1950, protocols of which appeared in the October MONTHLY.

chronic constrictive pericarditis following the acute pericarditis of trauma as against chronic mediastino-pericarditis of rheumatic orgin originally activated by trauma? Considerable help would be derived from venous pressure readings during the early years. Continued high venous pressures after relief of congestive failure would resolve the problem at once in favor of constrictive pericarditis. Calcification of the pericardium by X-ray would help also, as would fluoroscopic study. These observations are not available. The question of tuberculosis as a cause of the constrictive pericarditis comes up owing to the several febrile episodes associated with lung and pleural findings. Again no true evidence exists for tuberculosis although it is occasionally activated by trauma and does cause constrictive pericarditis.

Finally, a small heart shadow is not an absolute prerequisite[7] for a diagnosis of constrictive pericarditis and the two layers of the pericardium need not be completely adherent in constrictive pericarditis. It is stated that either the epicardium or the parietal pericardium[8] may be thickened. It would seem reasonable therefore to consider this as an example of constrictive pericarditis (concretio cardis) with thickening of the epicardium for example and pericardial effusion on the outside of this. Failing this explanation of the enlarged heart shadow, constrictive pericarditis with cardiac enlargement is still a reasonable assumption.

If this explanation be correct the usual congestive phenomena will appear in the other organs particularly in the liver which will be characterized by the pseudocirrhosis of Pick.

As it stands absolute differentation between the constrictive pericarditis and chronic mediastino-pericarditis is not possible without certain other observations, and as noted venous pressure readings, the question of pulsus paradoxus and diagnostic pericardial tap for pericardial effusion would be helpful. Clinical observations, however, favor the Pick syndrome.

Passing comment should be made on the terminal event which almost certainly will prove to be a pulmonary embolus from a thrombophlebitis in the left leg.

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Anatomical Diagnosis

Fibrosis and hypertrophy of left ventricle of heart (Chronic Isolated Myocarditis). Dilatation and hypertrophy of left atrium with mural thrombus.

Mixed cardiac and portal cirrhosis.

Anasarca, hydrothorax and peripheral edema.

Infarcts spleen and kidney.

Organizing bronchopneumonia, right upper lobe.

Pathological Discussion (Dr. Hennigar)

First of all, I would like to say I enjoyed Dr. Wood's discussion of this very elusive type of case. Elusive, both clinically and pathologically speaking.

At autopsy, the heart (see Figs. 1 and 2) was

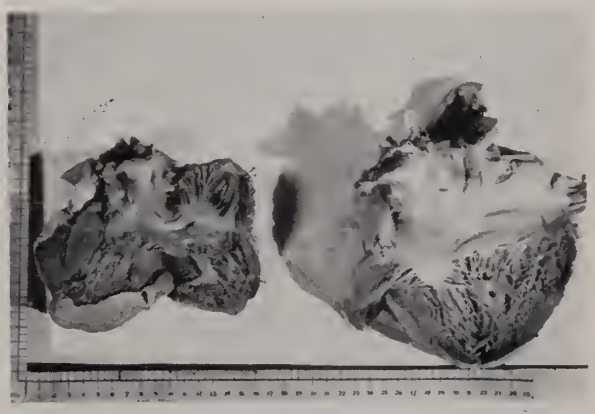

Fig. I The heart compared with a normal organ. Note the huge atrium.

enormous, weighing 650 grams. The increase in size was due to hypertrophy of the left ventricular myocardium, as well as to the huge, dilated left atrium. The pericardium was smooth and shiny. The myocardium of the left ventricle measured 2.3 cms. Throughout there was a very fine scarring extending from base to apex. The left atrium was immensely dilated and hypertrophied. A mural thrombus 2 cms. in widest diameter was present in the wall. The

Fig. II The left wall of the ventricle is hypertrophied. The coronary orifices are patent.

right ventricle showed slight hypertrophy.

Careful inspection of the endocardium and valves revealed no special change.

The liver weighed 2,330 grams. On cut section, the capsule was thickened and wrinkled with small 2 to 5 mm. nodules on the surface. On cut section, the nodules were pale in color and connective tissue trabeculae separated them.

The spleen weighed 260 grams. The surface inspection was not remarkable on cut section, an old pale infarct 3 cms. in longest diameter was seen.

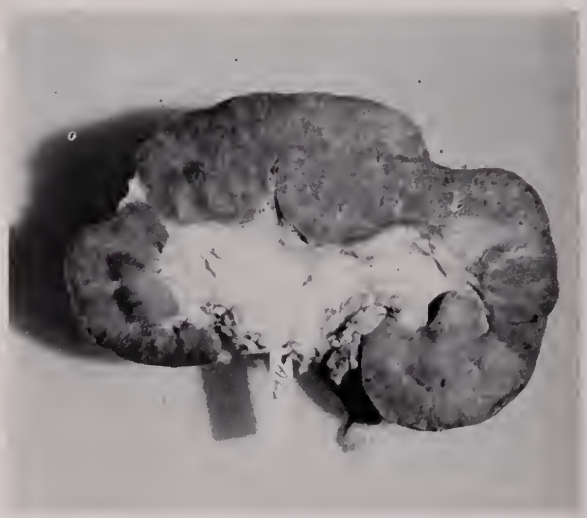

Fig. III The cortical markings are indistinct and there is a pale mottling of the whole parenchyma. The pelvis and calyces are wrinkled and opaque.

The right and left kidneys weighed 240 and 290 grams respectively. The capsules stripped readily displaying deeply grooved, bizarre, sizable scars. On cut section (see Figs. 3 and 4) the cortico-

Fig. IV Small yellow nodules are scattered throughout the liver, there is also fibrosis present. The intrahepatic veins are dilated and thick walled. The spleen shows an old infarct. Deep pitted scars are seen on the surface of the liver and fetal lobulation has persisted.

medullary junctions were not distinct and the pelves were granular and thickened.

The remainder of the gross examination revealed no special pathological changes. Permission to examine the brain, spinal cord and eyes was not granted.

Microscopically, the myocardium was the "seat" of diffuse fibrosis accompanied by marked hypertrophy and vacuolation of myofibrils. Numerous sections were taken from various regions of the left myocardium and all showed this same change. Sections of the right ventricle and left atrium revealed slight hypertrophy and minimal scarring. The vessels appeared normal.

Microscopic examination of the liver (see Fig. 5) revealed small nodules of liver cells separated by connective tissue. Many of the cells contained fat vacuoles. Angiogenesis and lymphocytic infiltration were prominent in the portal areas.

Microscopic examination of the spleen and kidneys reveal small infarctions. In addition, the transitional epithelium of the pelves and calyces were hyperplastic and the tubules lined by tall epithelium with granular cytoplasm. Many of the glomeruli were obliterated by scarring and lymphocytes in the interstitial tissue prominent.

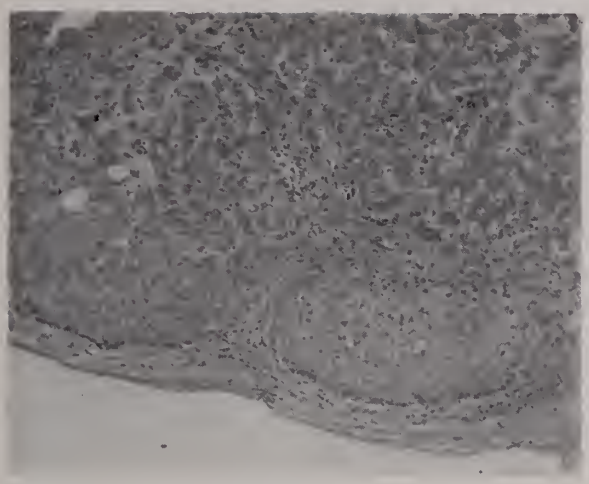

Fig V Liver. Two demarcated nodules are seen under a thickened capsule.

The lungs microscopically revealed the signs of long standing broncho-pneumonia and interstitial fibrosis (see Fig. 6).

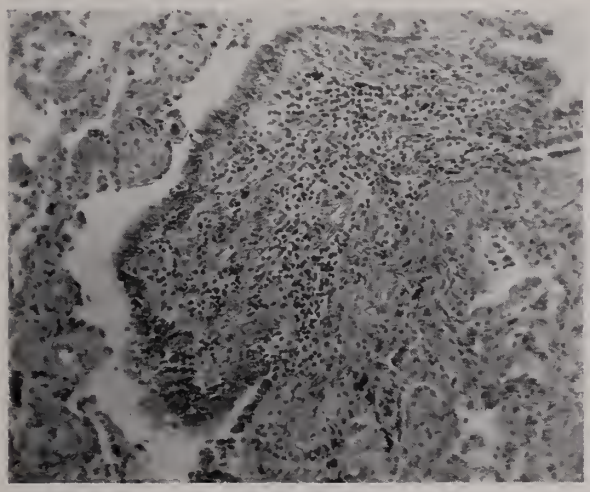

Fig. VI The bronchial wall is infiltrated with lymphocytes and fibrosis is prominent.

This case is one of idiopathic chronic myocarditis or interstitial fibrosis. Since Fiedler's[1] publication of a group of cases characterized by diffuse myocarditis of unknown etiology a great interest has been shown in these cases. In his group, the interstitial or supporting tissues of the myocardium contained polymorphonuclear leucocytes, lymphocytes, histiocytes and giant cells. This case today shows none of the acuteness of that type of lesion and we thus propose it as a chronic or healed Fiedler's myocarditis. It is obvious that this type of heart disease is simply one where we have not been able to discover the etiological agent.

Causes of Diffuse Myocardial Fibrosis

1. Coronary insufficiency with or without thrombosis and infarction.
2. Rheumatic carditis.
3. Congenital Heart Disease.
4. Severe Anemia.
5. Post Diphtheria myocarditis.
6. Syphilis.
7. Tuberculosis.
8. Subacute bacterial endocarditis.
9. Traumatic myocarditis.
10. Arsenic.
11. Sulfa.
12. Poliomyelitis, Scrub typhus and a variety of mycotic diseases.
13. Lupus erythematosus.
14. Fiedler's (isolated) myocarditis. Diffuse or granulomatous. Acute, chronic or healed.

Neither grossly nor microscopically (see Fig. 7)

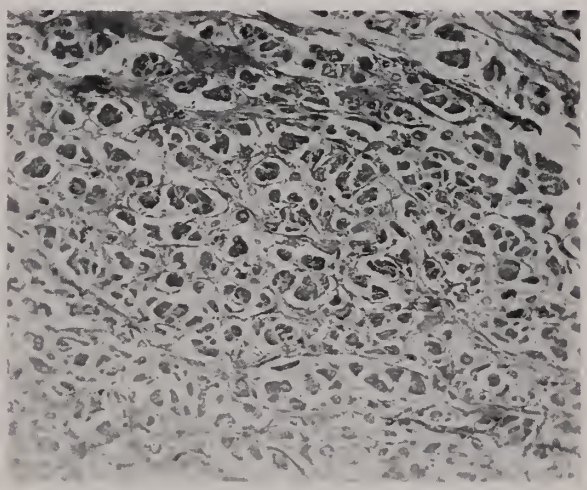

Fig. VII-A A diffuse fibrosis is present.

is there anything specific or pathognomonic for this type of myocarditis.

We have seen identical pictures in lupus erythematosus, congenital syphilis and post diphtheria myocarditis.

We believe this case to be identical with those described by Levy and Rousselot[2]. The cause of the sudden death was probably attributable to ventricular fibrillation as the result of the extensive fibrosis. The majority of cases of these kind die a sudden death.

The sequence of events in this case may be explained as shown in Fig. 8.

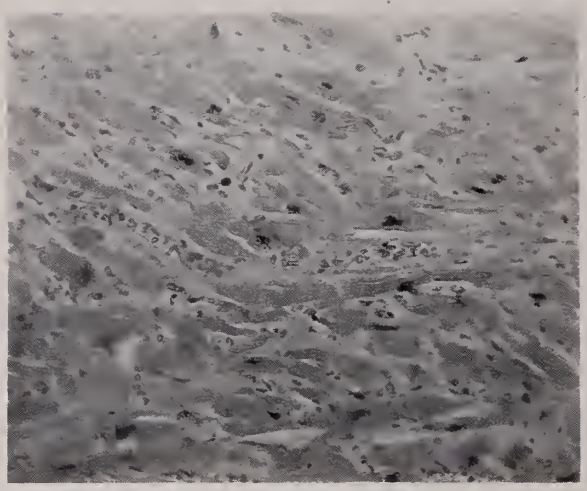

Fig. VII-B Note the large bizarre nuclei so often observed in marked hypertrophy of the myocardium.

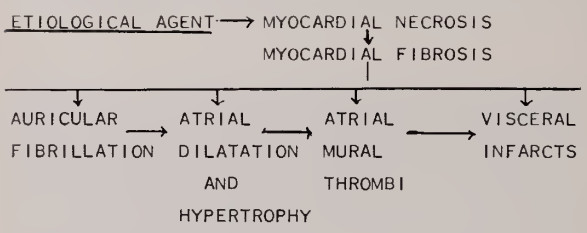

Fig. 8

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CASE II—PROTOCOL FROM UNIVERSITY OF VIRGINIA

Clinical Discussion—KINLOCH NELSON, M.D.,
Presentation of Pathology—J. F. A. MCMANUS, M.D.

DR. NELSON:

I appreciate greatly the opportunity to appear here and to study the very interesting record supplied from Charlottesville. Certainly no patient has ever been more thoroughly studied nor have such studies been so generally negative. As we read through the data we note observations which make me feel that the discussion should hinge around the kidneys which are certainly not functioning properly. Thus the basic problem is: do we have intrinsic kidney disease, do we have disease elsewhere in which kidney function is impaired secondarily, or do we have both? From this viewpoint I will now review the protocol.

The history shows a 71 year old female with vague weakness for six months or so, and more definite weakness, nausea, anorexia, occasional vomiting, and *marked* weight loss over a five-week period. We note a change in bowel habit more or less coincident with the onset of her illness. All these symptoms suggest malignant disease of the gastrointestinal tract, but this possibility can be discarded in view of the repeatedly negative x-rays, the absence of significant anemia, the negative proctoscopic examination, the absence of achlorhydria, and the stool examinations which were, for the most part, negative for blood. The "batting average" of these studies in ruling such cancer in or out is so high that we must omit it from further consideration. I expect that the history alone would have led to suspicions of psychoneurosis; without knowledge of the background, home situation, personality, etc., we can say little more along this line, except that such a marked weight loss is against this possibillity as are subsequent events, of course.

The physical examination was not helpful. The blood pressure of 150/84 is not exciting. The enlarged thyroid, kyphosis, and pelvic findings have little significance. The cardiac murmur is worrying because I cannot too well fit it and its subsequent course into my reasoning. Surely we should not be much concerned about a systolic murmur in an elderly woman with slightly elevated blood pressure. However, such murmurs are seldom recorded as "loud" or "to the left of the sternum", and it may well be that this finding is of great importance. I will refer to it again.

In the laboratory the blood counts are not helpful; they may be regarded as normal or evidence of slight dehydration. It makes me a little uneasy that no differential count is given but I presume this was an omission in the hospital (later rectified) as I was assured by Dr. Wood that he (I quote) "included all data available from the chart and none was withheld". The urine was scarcely abnormal and certainly not consistently so; a concentration to 1.016, 2+ albumin in one of three specimens, a few casts in one specimen, and a normal catheterized specimen are hardly compatible with any known intrinsic kidney lesion. However, there must be disturbed kidney function as manifested by nitrogen

retention and depressed phthalein excretion. These kidney problems will be discussed below. The blood proteins and sedimentation rate were normal and the blood sugar of doubtful meaning; it is noted that the first blood sugar of 100 might represent a low figure for this patient as a later one was 154; that is, as she improved the blood sugar returned to her normal level, possible evidence that some disease was upsetting her sugar metabolism. I feel that this is grasping at straws but one cannot make bricks without straw. The gastric analysis was of little moment. The agglutination tests were negative. I doubt if it would have occurred to me to get these done except that she ran a fever from 99-100 and had a good many vague symptoms. As you know, a rumor has gone around for some years that apparent neurasthenics with low-grade fever may have chronic brucellosis. Such a condition must be rare as we have tested many similar patients in the out-patient department with negative results. In any case I do not see how chronic brucellosis could have been responsible for this lady's illness and we will discard it. The electrocardiogram was not considered abnormal and the x-rays have been mentioned already.

Her course in the hospital is not informative. The low-grade fever suggests nothing much. Her depression may be quite significant. Her weight remained stationary, which may mean that the history of weight loss was an error (unlikely I think), or that she was improved by therapy (type unknown), or that her disease abated.

It would be interesting to know what diagnosis was recorded at this time.

Her progress at home brings out nothing striking. The apathy is noted again. Also it is worthy of mention that her second admission was precipitated by a belching attack. It may well be important that her pulse was rapid though her fever was still relatively insignificant. The change in the heart murmur is quite alarming to me because I cannot see its meaning. We might mention bacterial endocarditis at this point. Surely we must think of this in a patient with low-grade fever, a changing heart murmur, and disturbed kidney function, but I cannot believe it could be present in the absence of a palpable spleen, blood in the urine, petechiae, and organisms in many blood cultures; also the physical examination and x-rays disclose no enlargement or unusual contour of the heart shadow; nor is the course of the illness suggestive of this disease. I realize that all too often the bacteria cannot be isolated from the blood and that almost any finding or group of findings may be absent, but I will exclude it, nevertheless. I cannot then explain this changing murmur unless it reflects somehow the circulatory upset necessarily accompanying the electrolyte disturbance.

The physical examination was little changed except for a decline in the blood pressure, a very significant observation, we believe. It would be nice if we knew the subsequent course of the blood pressure but this is not available. It is again noted that the heart size was within normal limits by physical examination and x-ray. If we pursue the reasonable assumption that the blood pressure had been moderately elevated for some years, we might expect a heart shadow suggesting enlargement or at least rounding off of the left ventricle. Thus the presence of a heart of normal size suggests that it is unexpectedly small. Again we grasp at straws.

In the laboratory work on the second admission I will first take up those studies which seem of little significance. The stools may be disregarded. The blood counts are not helpful though the shift to the left might make one think of inflammation, as does a finding of 13,000 in one of two white blood counts. The bone marrow was normal. I wonder why this was done. Whenever I see a study, the reasons for which are not clear, I try to put myself in the place of the bedside clinician because his actual observation will often lead him to examinations not readily foreseen when one considers only the cold data. By so doing I have occasionally thought of possibilities I had not previously considered. No such light is shed here. The efforts to find some infectious agent by blood cultures, urine cultures, and agglutination tests were fruitless. I do not believe any ordinary germ could have escaped the clutches of the laboratory and I will exclude infectious disease with some reservations. It is not necessary to detail certain factors which, at first glance, suggest Weil's disease. When we recall that this disease has been reported, especially in Europe, in the absence of jaundice, we might be uneasy about the omission of any specific study along this line. However, the course of the illness does not lead me to consider it seriously. This brings us to the tuberculin test. A somewhat brief experience with this type of exercise has

made me realize that we should never come to any conclusion without seriously considering tuberculosis, cancer, and lymphoma. For these last two there is no shred of evidence and I will discard them at once; tuberculosis, however, cannot be so lightly dismissed. The negative tuberculin test may be regarded as evidence of the absence of tuberculous infection, now or ever, or, quite the contrary, it occurs in relatively acute overwhelming disease. The possibility of generalized tuberculosis here is somewhat attractive, as we have recently seen a similar case in a man of 70. Also we note the prominent hilar shadows and "non-specific" pulmonary fibrosis. However, I do not believe this patient has generalized tuberculosis, chiefly because of the kidney status. The electrocardiogram and x-rays are within normal limits. We may assume that no calcification was noted in the kidney or adrenal areas. The spinal fluid and skull films were normal. I wonder why the latter were done; perhaps brain tumor was suspected. The serological tests for syphilis were negative. The liver function tests were normal, as was the blood sugar (note that again it is lower than the value recorded when she improved before). The blood proteins were somewhat reduced. The pancreatic function tests are difficult to evaluate. The lipase was normal. The amylase was high one day and normal the next. I cannot see the significance of this and am forced to exclude intrinsic disease of the liver and pancreas.

The gastric analysis is not important except that a patient who has free acid and is vomiting a great deal loses large amounts of chlorides, thus reducing the blood chlorides and raising the CO_2, both prominent findings in this case. However, we do not get the idea that vomiting was profuse, frequent, or regular though such may have occurred in her latter days.

We come now to the kidney, where, as stated originally our problem seems to center. Observe that no where in the record is there any mention of urinary output. We have no knowledge of its increase or decrease, possibly very important points. We recall that in the first admission the urinalyses were variable and of doubtful significance, that the PSP was 35, and the blood urea 57, later dropping to 29, perhaps as the result of hydration and other treatment. In the second admission we again find slight and inconstant variations from normal urine, observations which to me eliminate intrinsic kidney disease of any type, with one exception, namely salt losing nephritis.

Thorn[1] described two cases (I can find no others) considered to be in Addisonian crisis because of their shock-like state and characteristic electrolyte pattern. Their urinalyses were normal. Both responded to massive doses of sodium chloride, and later bicarbonate, whereas specific treatment of adrenal cortical insufficiency was ineffectual. Both later died with chronic kidney failure. The data here do not suggest this course.

The blood urea was elevated and variable (perhaps related to treatment) with marked terminal rise; the urea clearance was 38.6% of normal; and the phthalein excretion was low, particularly that in fifteen and thirty minutes. These findings are inescapable evidence of depressed kidney function yet we believe the kidneys were anatomically normal. We must then seek for disease elsewhere which affects these kidney functions. Such conditions must also have a persistently low blood chloride (unresponsive to treatment, type unknown) and a somewhat high CO_2, bearing in mind that these latter findings may be related to the vomiting of hydrochloric acid, and the failure to take in salt because of nausea and anorexia. It is generally believed that the blood sodium level can be estimated reasonably accurately by adding the chloride level (77) to the CO_2 (37) plus an arbitrary figure of 10. By so doing we get a value of 124, indicating that the blood sodium is also quite low. We would very much like to know the blood potassium level but it is not at hand.

Thus we narrow our search to extra renal conditions where kidney function is depressed, nitrogen is retained, and blood sodium and chlorides are low. Referring to Cantarow and Trumper[2] we may list these possibilities: Loss of gastro-intestinal secretions; shock; burns; intestinal and pyloric obstruction; infectious diseases; severe liver disease; diabetes mellitus; excessive sweating; adrenal cortical insufficiency; and hyperparathyroidism.

At a glance we may reasonably eliminate most of these. However, we are still left with infectious disease and adrenal cortical insufficiency. The latter is especially attractive but for one almost insurmountable obstacle, namely the absence of pigmenta-

tion. I have not personally recognized a case in which it was absent; some authors state that it is always present. However, proven cases are recorded without it.

In following the course of the case we find that she went progressively downhill with anorexia, nausea, vomiting, marked apathy, rising temperature, and low blood chlorides. Treatment was unsuccessful in correcting the hypochloremia. It would be interesting to know what this treatment was. Was it intravenous fluids, adrenal cortical extract, or desoxycorticosterone, or some combination of these? Also since she had fever she must have gotten antibiotics.

To sum up, in our final conclusions we must review four possibilities.

I. Infection, such as generalized tuberculosis, as suggested by weakness, weight loss, nausea, vomiting, rising fever, dehydration, and low blood chlorides. Many studies failed to yield any clue as to etiology or location.

II. Chronic nephritis, as manifested by the same symptoms, the abnormal kidney function tests, the nitrogen retention, the hypochloremia, and inferred hyponatremia. Against this diagnosis are the many more or less normal urines, the apparently declining blood pressure, the normal intravenous pyelograms, and the course of the disease. We cannot absolutely exclude salt losing nephritis but, judging from the only available reports, this seems a very remote possibility.

III. Adrenal cortical insufficiency. There is no suggestion of other gland disturbance particularly, so that we do not believe primary pituitary failure should be considered. Primary adrenal failure, or Addison's disease, is strongly suggested by the weakness, apathy, gastro-intestinal symptoms, precipitation of hospitalization by a belching attack, marked weight loss, declining blood pressure, slight electrocardiographic changes, heart of normal size, suggestion of disturbed sugar metabolism, nitrogen retention, abnormal kidney function tests, low blood chlorides, and inferred low blood sodium. Further the course of the case was rather rapidly downhill and the terminal rise in temperature has often been noted in this disease without evidence of infection at autopsy. The absence of pigmentation, the low-grade fever throughout, and the changing heart murmur are very annoying, especially the lack of pigmentation. However, had such changes been present we would not be discussing this case. If we assume Addison's disease we must consider either tuberculosis or atrophy of the glands. Favoring the former are the low-grade fever, and statistics; suggesting the latter are the absence of evidence of tuberculosis elsewhere and the negative tuberculin test.

IV. There is, of course, the possibility of some combination of factors, such as both renal and adrenal disease; terminal infection as in the lungs cannot be entirely excluded.

Having put off the evil hour as long as possible I will conclude by making a diagnosis of Addison's disease due to atrophy of the adrenal glands.

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Pathological Diagnosis

Adenocarcinoma, tail and body of pancreas with local extension and metastases to liver, kidney, peritoneum and lymph nodes.

Confluent lobular pneumonia, right lower lobe.

Generalized arteriosclerosis, moderate.

Cardiac hypertrophy with scarring.

Chronic cystitis.

Bilateral chronic pyelonephritis, moderate.

Presentation of Pathology—Dr. McManus

The body was that of a well developed, elderly, white female showing a 4 x 3 cm. decubitus ulcer on the posterior thorax.

Viscera revealed an adenocarcinoma arising in the body and tail of the pancreas, with local extension to the left kidney, stomach and surrounding peritoneum, especially the transverse colon. Also noted were metastases to the liver and regional lymph nodes.

The kidneys showed changes consistent with the findings of chronic pyelonephritis, and the bladder showed chronic cystitis.

There was moderate arteriosclerosis and hypertrophy of left ventricle of heart with scarring.

Confluent lobular pneumonia was seen in the right lower lobe of lung.

The adrenals showed no significant change, though it is quite conceivable that altered function might exist without demonstrable changes.

PUBLIC HEALTH

L. J. ROPER, M.D.
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Disease Control of the State Department of Health for September 1950 as compared with the same month in 1949, and for the period of January through September 1950 as compared with the same period in 1949, is as follows:

	Sept. 1950	Sept. 1949	Jan.-Sept. 1950	Jan.-Sept. 1949
Typhoid and paratyphoid	11	14	68	104
Diarrhea and dysentery	540	983	3,250	4,901
Measles	65	39	2,541	21,276
Scarlet fever	55	58	674	514
Diphtheria	30	14	132	106
Poliomyelitis	331	84	878	247
Meningitis	1	7	94	73
Brucellosis	9	13	49	56
Rocky Mountain spotted fever	7	11	65	97
Tularemia	8	3	33	28

IMMUNIZATION IN COMMUNICABLE DISEASE CONTROL

With the opening of schools and the coming of the fall and winter season when we anticipate a rise in the incidence of the communicable diseases of infancy and childhood, it is well for physicians and public health workers to take inventory of the degree of community protection against such diseases.

The accompanying table shows the decline over twenty years in three communicable diseases for which specific immunizing agents are available:

The decline in incidence as shown by the above list is mainly due to the continuing immunization activities of practicing physicians and public health authorities, but it is essential to realize that the job is not complete as long as new crops of non-immunes are coming on and the ones previously immunized have lost some of their early acquired protection. Immunization of the young, with later booster doses to maintain immunity at high levels, is the basis of effective control. In this continuing control "Eternal vigilance is the price of safety".

In an immunization clinic held in one of the Virginia Counties it was startling to find how many school principals and teachers had never been vaccinated against smallpox. The principal of one school, who also drives the school bus, had such a marked reaction when vaccinated that he could not drive the bus and a holiday had to be declared for three days. The pupils were unanimous for compulsory vaccination, even though late.

The public is inclined to regard whooping cough, along with chickenpox and mumps, as one of the minor diseases of childhood. A look at the record shows that in 1948 there were 41 deaths from whooping cough as compared to 32 from poliomyelitis. The importance of early immunization with whooping cough vaccine should be stressed, since children under two years of age are most susceptible to fatal attacks. Immunization should be begun by the second month and certainly not later than the sixth.

INCIDENCE OF CERTAIN COMMUNICABLE DISEASES IN VIRGINIA—1930-1939

Year	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Diphtheria	2,210	4,866	2,057	2,139	1,989	1,502	1,252	1,294	1,794	1,474
Smallpox	264	124	17	10	13	10	4	6	5	0
Whooping Cough	8,389	6,987	11,777	2,607	5,449	3,355	1,924	4,324	3,803	3,054

1940-1949

Year	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
Diphtheria	709	754	699	395	329	577	548	273	265	220
Smallpox	5	0	0	0	1	0	0	0	0	0
Whooping Cough	2,902	4,327	2,405	5,060	2,719	2,749	3,058	4,234	2,271	1,378

MENTAL HEALTH

Joseph E. Barrett, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Convulsive Therapy and Related Psycho-Physiolcgical Phenomena*

The two types of convulsive therapy most widely employed in Virginia mental institutions are electrocoma and deep insulin coma. Metrazol shock has almost been abandoned. The term "shock" is unfortunate in that it frightens practically all laymen and even most physicians.

Electro-convulsive therapy is administered with a variety of instruments and techniques. Its several forms are also referred to as electro-shock and electro-stimulation. Electronarcosis is a modification of one of these with considerably more restricted usage. These therapies are employed in all major psychoses (organic and functional), psycho-neuroses, personality disorders, alcoholism (not in states of intoxication), drug addictions, and barbiturate intoxication (for stimulation of respiratory centers). They are generally used before deep insulin shock is resorted to and only discarded in favor of the latter when it becomes apparent that desirable results will not ensue.

Deep insulin shock is a much more drastic therapy than the electrocoma therapies. It is reserved usually for schizophrenics between the ages of 18 and 40 who are in good physical condition and who have been shown to be refractory to electrocoma.

Both electrocoma and insulin shock are employed with widely varying results in post-lobotomy syndromes. Electrocoma is used with moderately good results in such psychosomatic disorders as spastic colon, asthma, pylorospasm, functional vomiting, tension-type headaches, etc. Even migraine, diabetes mellitus, and thyrotoxicosis appear to improve with this line of therapy.

Convulsion brought about by electrostimulation has essentially the same physiological modus operandi as epilepsy. The electrochemical impulse which is set up by the stimulation spreads in concentric and ever-widening waves in all directions from the area of stimulation until the hypothalamic cortex is reached. From this control center of the sympathetic system, a chain of stimulatory electrochemical impulses is set into action and passed down the sympathetic chain setting all the sympathetic functions of the organism into frenzied activity for a short time. This process does not exclude the sympathetic innervation of the adrenal cortex which immediately sets about to produce ACTH in the pituitary in large quantity. One electrocoma treatment is said to produce many times more than the average dose of 25 milligrams of parenterally administered ACTH. This is likely a large part of the explanation of the improvement in certain types of arthritis seen as the result of electrocoma.

Despite all the theoretical, as well as practical, implications of electrocoma, they must not be magnified to the exclusion of psychological factors involved in the treatment situation and of other physiological phenomena incidental to the procedure. Among the latter may be mentioned the postulated transient physiological separation of the frontal cortex (with its ideational centers) from the thalamus (with its affective centers). This is said to be brought about by a transient blocking oedema of the fibers of the fronto-thalamic radiation producing temporarily that which is produced more permanently by lobotomy. This postulation is open to some question in the opinion of the writer, but it must certainly be admitted that some very beneficial dissociation of affect is seen as the result of electrocoma and insulin shock. Certainly, we must also consider the role of the metabolite, lactic acid, which is elaborated in the muscles in large quantities in convulsive therapy resulting in the production of relaxation and in the diminution of tension, anxiety, and depression. Duke University investigators have advocated and used extensively their lactic acid-sodium lactate therapy in the depressions. The effects of altered oxygen-carbon dioxide ratios should receive attention as well as of the transient cortical telangiectasis both of which occur during electrocoma, insulin shock, and gasconvulsive therapy. There are also a good many other psycho-physiological phenomena in connection with electro-coma which cannot be discussed here due to lack of space.

*Article prepared by C. Earle Johnson, Jr., M.D., Superintendent, DeJarnette State Sanatorium, Staunton, Virginia.

It would seem that great strides are now in the making in the dove-tailing of physiologic with psychiatric science. As recently as five years ago, leading psychiatrists and internists of the country were unable to comprehend or to endorse the etiological approach of totality so strongly advocated by the school of psychobiology and its founder, Adolf Meyer. Now, it would appear that the purely organic and purely functional schools are fading into the past.

Of the psychological factors entering into the electro-coma treatment situation, a great deal has been written, especially by the psychoanalysts. These concepts, while they may not be considered in detail here, are undoubtedly of great importance. The successful and best administration of electrocoma and of deep insulin shock involves a great deal more than the simple mechanics of the procedures.

If the writer has indicated undue enthusiasm for convulsive therapies, it is hoped that extenuating circumstances may be found in his personal experience of somewhat more than 10,000 such treatments. It is emphasized that despite such experiences by different psychiatrists, the surface has been barely scratched in the ramifications, implications, and potentialities of the various types of convulsive therapies.

BOOK ANNOUNCEMENTS

Friend of the People. The life of Dr. Peter Fayssoux of Charleston, South Carolina. By CHALMERS G. DAVIDSON. Published by the Medical Association of South Carolina, Columbia, 1950. vii, 151 pp. price $2.75.

This attractive little book is very timely. Little is known about this Revolutionary hero of South Carolina, and what has been published about him is inaccurate. The *Cyclopedia of American Medical Biography*, for instance, gives him a middle name and a birthplace in Southern France and does not mention his first wife.

The author, Dr. Chalmers G. Davidson, is a professional historian and his story is well documented. Much of his information is obtained from Fayssoux's correspondence with Benjamin Rush. The two physicians were schoolmates in Edinburgh and carried on a correspondence until Fayssoux died of apoplexy, February 1, 1795. Two of Fayssoux's daughters apparently had Hansen's disease. The father's description of his daughters' disease in his letters to Rush and his attempt to get medical help is one of the most interesting parts of the book. The part that Fayssoux played in that critical period of the nation's history before the adoption of the constitution is especially interesting at this time when the constitution is fast losing its position of prime importance in our fundamental law.

M. P. R.

A Century of Medicine in Jacksonville and Duval County. By WEBSTER MERRITT, University of Florida Press. Gainesville. 1949. 201 pp. Price $3.50.

There is need of state and county medical histories for two reasons. One is as a reference work where one can find biographical information about doctors who are not quite important enough to be listed in the usual biographical dictionaries.. The other is that it may be an interesting story of a too-frequently neglected subject. Very often the first object overshadows the second. Dr. Merritt has happily combined the two and his book makes good reading even for those who have no local interest. The present work is important because in the Jacksonville fire of 1901 many records were destroyed and much important information would have been lost forever had not someone with historical training undertaken to gather it and critically analyze it at this time.

Particularly interesting are the struggles of Jacksonville with epidemics of scarlet fever, smallpox and yellow fever. The difficulties the local health authorities had with commercial interests and the newspapers strike a familiar cord. How the problem of public water supply was solved is always of interest to thousands of small communities throughout the country. Probably the most interesting chapter is that dealing with the impact of the Civil War on Jacksonville and the surrounding country.

The book is well illustrated and has an attractive format.

M. P. R.

EDITORIAL

William Henry Welch (1850-1934)

ONE hundred years ago a boy was born in Norfolk, Connecticut, who was destined to revolutionize the teaching of medicine throughout the entire world. "Dr. Welch" was no new name in New England. For three generations there had been one to three Doctors Welch in Norfolk. The inhabitants of Lichfield County must have been surprised therefore, when the son of Dr. William Wickham Welch in 1866 went to Yale to study the classics instead of medicine. God must have had other plans for William H. Welch, for when he was unable to find an attractive post in Greek, he reluctantly turned to medicine. He entered the College of Physicians and Surgeons in New York, graduating in 1875. From then on his course was as consistent and purposeful as if he had been following a blue print.

When Dr. Welch graduated in medicine, medical education in this country was anything but inspiring. There was not a laboratory in the country where one could study a problem in physiology, pharmacology, pathology or even microscopic anatomy. There was, of course, no such thing as bacteriology.

In 1876, Dr. Welch went to Europe for postgraduate study. In Strasbourg he found that he could not take v.Recklinghausen's course in pathological histology because he had no knowledge of histology. He had to be content with a course in gross pathology and a course in histology under Waldeyer, and to fill in he took a course in physiological chemistry under Hoppe-Seyler. In the autumn he enrolled in Prof. Wagner's pathological institute in Leipzig, and more or less by accident found his way to Ludwig's laboratory where he worked on a problem of the distribution of the nerves of the heart. It was at Leipzig that he first met John Shaw Billings who even then was gathering information preparatory to starting the hospital and medical school at Johns Hopkins. They had an evening together in Auerbach's Keller, and Billings advised Welch to spend another year in Germany. At Ludwig's recommendation he next went to Breslau and entered Cohnheim's Laboratory. Here he worked out the mechanism of edema of the lungs. He was in Breslau when Koch came there to demonstrate his work on anthrax to Cohnheim, but Welch does not seem to have been impressed. At Cohnheim's suggestion he went to Prague to visit Klebs. Next, he went to Vienna to take some "practical courses" in case he would have to practice medicine for a living when he returned to America. He stayed in Vienna only 6 weeks, and then went back to Strasbourg for the course under v.Recklinghausen in pathological histology that he wanted to do at first. After a sight seeing trip to Paris and London, he sailed for home on February 6, 1878.

The next six years were spent in trying to sell to New York the knowledge he had acquired in Germany. They were hard, discouraging years, but he learned what America needed in the way of scientific medicine and how to organize courses. Above all, he learned to teach. When President Gilman and John Shaw Billings were ready to start their medical school in Baltimore, Dr. Welch was prepared for the job. He was the first professor appointed to the medical faculty and he had a voice in the selection of the other members. He was granted a year's leave to go abroad to buy equipment and to study the new science of bacteriology. He applied to Koch for permission to work in his laboratory, but Koch's laboratory belonged to the Army and it was necessary to get permission of the Minister of War. Koch advised him to study under his pupil Frobenius in Munich. This he did, but of more importance was his contact with Pettenkofer and his public health work, and with v.Ziemssen who had

the first clinical laboratory in Germany. He was also impressed with the fine laboratory of the veterinary school. Later he studied under Flügge in Göttingen and finally under the master himself when Koch transferred to his new laboratory. On his way home he visited England and spent some of the Hopkins money buying apparatus in Cambridge.

The story of Dr. Welch at Hopkins is well known. His own investigations, particularly in thrombosis and embolism and the discovery of the *Clostridium welchi* were outstanding, but of more importance, he trained pathologists for the nation. He took great interest in community health projects and rendered invaluable service in planning Baltimore's sewerage system. For years he was President of Maryland's State Board of Health. Of even greater importance from the standpoint of medical education was his presidency of the Board of Scientific Directors of the Rockefeller Institute which position he held from 1901 to 1933. He was also chairman of the Executive Committee of the Carnegie Institute of Washington, Chairman of the Advisory Council of the Milbank Memorial Fund, and Chairman of the Advisory Council of the Rockefeller Foundation's Sanitary Commission. The School of Public Health at Hopkins, the first of the kind in the world, was a natural result of Dr. Welch's interests in medical education and in public hygiene. The same may be said of the Institute of Medical History at Johns Hopkins. The important thing, however, was that Dr. Welch's wisdom and sound knowledge of the subjects insured their being established on a firm basis of university teaching. President Bronk, in the recent Welch memorial issue of the Johns Hopkins Hospital Bulletin, aptly summarized the situation by calling William Henry Welch the greatest statesman of the world in the field of public health. He might well have added and of medical education.

Recent Statistics on Draftee Rejections

DRAFTEE rejections for physical reasons in August were about 20 per cent lower than they were in July. Rejections for all reasons were 49.4 per cent in August as contrasted with 69.4 per cent in July. Twenty-two and a half per cent of the total number examined was for physical defects. According to Gen. Hershey the drop in percentage of rejections for physical reasons (29 per cent) was due largely to a change in dental standards.

We have no quarrel with the Army for these changes. It knows, no doubt, the dental requirements of Army chow. What we object to is the use of such statistics for purposes other than for the purpose for which they were gathered. The next thing we will hear is that the country needs more and better medical care as is shown by the great numbers of rejectees on account of physical defects. Had Hollywood Producers formulated the dental standards the percentage of rejections would probably have been 98 per cent. On the other hand, had the standards been adjusted to farm, factory or counting house requirements, the percentage would have been a great deal lower, possibly 15 per cent. Yet these Army figures will be used before various committees of the Congress without any reference to the varying standards upon which the examinations were based.

It is interesting that there was little change in the percentage of rejections for mental and educational reasons—21.9 per cent in August and 20 per cent in July. Gen. Hershey has been urging an easing of physical and mental-educational standards by the Armed Forces, pointing out that in World War II the total rejection rate was between 34 and 35 per cent, as contrasted with the August 1950 rate of 49.4 per cent. In the same paragraph, he is reported to have said that less than one-third of the men deferred to take pre-medical training ever enter the medical school. Does this mean that they are not up to the present physical and mental-educational standards?

Our New President

CHARLES LYDON HARRELL, M.D.

AT the Annual Session of 1950, in Roanoke, Charles Lydon Harrell was installed as President of the Medical Society of Virginia.

Doctor Harrell was born March 19, 1883, in Gates County, North Carolina. He attended Randolph-Macon Academy and Randolph-Macon College in Virginia, later receiving his medical degree in Richmond in 1909, at the University College of Medicine, which afterward affiliated with the Medical College of Virginia. After hospital experience at the Virginia Hospital, in Richmond, and the New York Post-Graduate Hospital, he began the practice of medicine in Norfolk in 1910. In 1911, he was married to Miss Ethel Toone, of Richmond, who died in 1926. He later married Miss Lela Wilson, of Norfolk. There are three older sons, Edward, C. Lydon, Jr., and Gordon, and another son, Wilson, by the second marriage. Gordon has chosen a medical career, and is an oto-rhinolaryngologist in Norfolk.

From the beginning of his long and active medical career, he has been particularly interested in tuberculosis, and diseases of the chest have always been his sub-specialty in the field of internal medicine. He assisted Doctor Charles R. Grandy in pioneer tuberculosis free clinic work in Tidewater Virginia for 22 years, was Medical Director of Tidewater Victory Memorial Hospital (tri-county tuberculosis) during its lifetime, and has been in charge of the Tuberculosis Unit of the Norfolk General Hospital since its organization. He is also consultant in tuberculosis at the U. S. Naval Hospital, Portsmouth, Virginia. During World War I, he served with a Selective Service Draft Board of the City of Norfolk, and was Chairman of the Draft Boards in the City of Norfolk during World War II. He is a member of the Kiwanis Club, and has been on the Board of Stewards of the Ghent Methodist Church for a number of years.

Many other organizations have profited by his active membership and his work for them. He has headed the Medical Staff of the Norfolk General Hospital, and has also given freely of his time and advice to the Staffs of the DePaul and Leigh Memorial Hospitals of Norfolk. He is a past-president of the Norfolk County Medical Society, and during his term in 1929, organized its permanent Annual Spring Clinic for Tidewater physicians. For the Medical Society of Virginia, he has served as a Vice-president, and as Councilor of the Second District, as well as heading the Committee on Tuberculosis for some years. He is a past president of the Alumni Association of the Medical College of Virginia. The Seaboard Medical Association elected him its President in 1943. He is a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a Charter Member of the American College of Chest Physicians, for which he is Governor of Virginia at this time.

This introduction of your new President would not be complete without stating that his physical stature is in inverse proportion to his capacity for useful work. His experience has been shared freely over the years with those asking it. Although alone in a large private and consulting practice, you will never find a committee meeting too small or too far for him, nor any medical or administrative problem too great for him to try to solve. We are fortunate in having him to guide our Society through the coming year.

W. P. A.

Negroes and the VMS

THE refusal of the House of Delegates of the Medical Society of Virginia, which met here this week, to admit Negro physicians as members of the Society was softened somewhat by the subsequent adoption by unanimous vote of a resolution to invite Negro doctors to attend its "regularly scheduled scientific sessions", accompanied by a recommendation that its constituent groups adopt a like policy. Furthermore, the resolution directed the Society's professional publication, the Virginia Medical Monthly, to invite the submission of articles by members of the Old Dominion Medical Society (the State organization of Negro doctors) "for publication if and as merited".

As a matter of fact, the House of Delegates had voted 53 to 30 to permit Negroes to be admitted into the Medical Society, the vote in favor of the step falling only five votes short of the two-thirds necessary to amend the Society's constitution.

President-elect John T. T. Hundley, who will take office in October, 1951, in moving the adoption of the resolution to invite members of the Old Dominion Medical Society to attend scientific sessions of the VMS and to submit articles for publication in the Virginia Medical Monthly, expressed his belief that any immediate steps beyond those outlined in the resolution were "impractical" for the reason that the problem is "social and political" as well as "medical". That action on the resolution was unanimous is indicative of the fact that Dr. Hundley's view was shared by members of the Society generally.

While recognizing the social aspects of the problem and freely conceding that they are not to be lightly brushed aside, we cannot refrain from expressing the hope that the Society's refusal to let down the bars to Negro doctors will not be construed by the latter as intending the slightest reflection on their professional standing or excellent services as medical practitioners. It was not so intended, they can be sure.

Here in Roanoke, as elsewhere throughout the State, there are skilled and conscientious Negro physicians who are rendering an invaluable service to the public and to their profession and who are rightly held in the utmost esteem by their white colleagues, with whom they work in cordial understanding and mutual respect. The fact that a decisive majority of the Society's House of Delegates was in favor of granting them

admission into its membership is a significant indication of the trend of the times that can hardly be minimized.

The Negro is earning deserved recognition of his worth and attainments as a citizen and as a member of society and the barriers of unreasonable prejudice are rapidly coming down, though not all at once. And that to our way of thinking, is as it should be.

(Reprinted from *Roanoke Times*, October 11, 1950, by order of the Council of the Medical Society of Virginia)

Bibliotheca Obstetrica

Rush, Benjamin

Rush, Benjamin, (1745-1813): On the means of lessening the pain and danger of childbearing and of preventing its consequent diseases: in a letter to Dr. Edward Miller by Benjamin Rush, M. D. *Medical Repository* 6:26,1803.

——: An account of the late Dr. Hugh Martin's cancer powder, with brief observations on cancer. Trans. American Philosophical Soc.2:212,1786 (photostat).

——: An inquiry into the effects of ardent spirits upon the human body and mind, with an account of the means of preventing and of the remedies of curing them. 7th ed. *Boston, Manning and Loring.* 1812. 36 p.

——: Medical inquiries and observations. VIII, 206 p. *Philadelphia, Richard & Hall.* 1789.

——: Essays, literary moral and philosophical . . . *Phil. Thos. & Samuel F. Bradford.* 1798. 378 p. 20 cm. (M.L.)

——: Works . . . *2nd American ed. Phila. Thos. Dodson* 1794.5 v. 21 cm. (M.L.), Biography, The Autobiography of Benjamin Rush. Princeton University Press. 1948. Iconography, Radbill, Samuel X. Trans. and Studies, Coll. Physicians. Philadelphia. 16:73,1948. As an Obstetrician, Rucker, M. Price, Ann. Med. Hist.3rd series 3:487,1941.

That three Philadelphians should have written upon blood-letting as means of lessening pain in difficult labors in the early 19th Century is not so remarkable when we consider the background. It was the time when blood-letting was well nigh an universal remedy. Philip Syng Physick used this remedy to relax a patient with an old and irreducible dislocation of the shoulder and thus made its reduction easy and painless. Their eulogistic descriptions of the benefits of blood-letting are almost convincing, even today. It was only when the statistical methods of Louis were introduced in the next generation that bleeding disappeared from the armamentarium. Rush says that it was in 1795 that "he was led to suppose that blood-letting might be effectual in lessening the violence of the disease and pains of parturition." In his writings Rush always referred to pregnancy and labor as disease, but in his lectures to medical students he treated of them under physiology. Dewees had begun to make use of the method in 1789 and evidently influenced Rush who supplied the philosophy for the procedure. Peter Miller supplies the evidence, in his graduation thesis, that it was an accepted method of treatment.

Benjamin Rush is easily the best known man in American Medicine, and yet comparatively little is known of his obstetrical activities. He seems to have taken great interest in the subject throughout his professional life. His preceptor was Dr. John Redman who was, according to Dr. Bond, the best obstetrical practitioner in Philadelphia. On his return journey from Paris to London in 1768-9, Rush tells of his hearing a woman cry in the woods, and of his delivering her on a blanket under the trees and of the woman naming the baby for him. The numerous students' notes that are in existence in the various libraries all over the country show that he regularly lectured on obstetrics under the head of physiology.

PRESIDENT'S MESSAGE

During these troubled and serious times it is with fear and trembling that I accept the honor and responsibility of being your President during 1950-51 —fear that I might take one step in the wrong direction, making a severe mistake, or hurting someone's feelings; trembling for fear I might not have the strength, ability and courage to do the things that should and must be done. With your cooperation and God's help, we will carry on the very best we know how.

Under the leadership of Dr. W. C. Caudill, our president for the past year, a number of worthy objectives have been accomplished.

The membership has been increased to 2205. Two or more local medical societies have been formed. It is believed that more frequent meetings in some local medical societies have been arranged. The number of Women's Auxiliaries has been increased. A move has gotten under way to provide adequate space for our headquarters and to employ the necessary personnel.

The Society's support of, and opposition to, legislation, according to its merit has been effective. We could continue with further references to progress of the year, but I shall refer later to some of these in my address.

This being a legislative year, a number of items of interest to the medical profession might be mentioned: an increase in appropriations for public health, especially for tuberculosis treatment and control, and for mental hygiene. When these proposed plans are completed, the facilities for each will be greatly improved and nearly doubled in capacity.

Legislation concerning the office of Chief Medical Examiner and the State Coroner system was improved, and an attempt to transfer this to the State Police Department was defeated.

The problem of regulating the practice of the healing art without a license, with special reference to the chiropractor, was definitely improved. This legislation passed both houses without a dissenting vote. References to such matters as the practice of chiropodists, practice by clinical psychologists, a resolution opposing socialized medicine, etc., are among other matters that may be found in the report of the Legislative Committee.

In Congress, a number of bills have been introduced, which, if passed, would lead to the Federal control of the practice of medicine. Practically all these bills thus far were either held up in committees or killed in the House or Senate. The Social Security Bill, otherwise known as HR6000, was passed. However, the part that concerned us most was deleted. Members of the medical profession were not included in Old Age pension insurance. The clause pertaining to permanent and total disability was also eliminated; had this last clause been left in the bill, it would have been unacceptable to the medical profession, and a tremendous expense to the Government. Much of this success was largely due to the efforts of the A.M.A. Department of Public Relations and the diligent hard work of a number of our most interested physicians.

The American Medical Association's officials, the Public Relations Department, through Whitaker and Baxter, and public relations' departments of our State societies have done, and are still doing a great job in trying to educate the public of the undesirableness of socialized medicine, advising the public of the disadvantages and hardships they would have to endure in case the Federal Government should gain control of the medical profession and hospitals. Your officers and paid personnel cannot do the whole job; it behooves each and every one to do his and her part.

There are many who feel that as soon as the elections are over and a new Congress convenes, many new bills in sheep's clothing will be introduced, endeavoring to destroy our medical independence. We must get together, keep together and work harder than ever before or our cause will be lost to us forever.

In December of last year, the A.M.A. raised its dues to $25 per member to help meet the increase in operating cost and to defray the expense of the educational campaign which it has conducted the past two years. Heretofore, they have been able to operate with fees received from the journals and advertisements. The cost of everything has more than doubled, including salaries; consequently, as they were not able to operate without additional funds, they had no recourse but to raise the dues. Many of the States have made an excellent showing, as high as 90 per cent of the membership of some states have paid their dues. We regret that Virginia

has fallen way behind. Our Secretary-Treasurer informs me that as of October 1, less than 40 per cent of our membership have paid their dues. This is embarrassing and should be regarded as a discredit to our State Society. Organized medicine has done much for the individual membership in every State Society and for the profession; we must not let it down in its time of peril or greatest need.

Another phase should be considered; this Society has three Delegates to the A.M.A. We are entitled to one Delegate for each thousand paid members and fraction thereof. Unless we have more than a thousand paid members by December 31, 1950, we will stand to lose two Delegates. The responsibility of collecting A.M.A. dues has been assigned to the secretaries of the local medical societies. I strongly urge that action be taken by our society in the interest of improving the practice in this respect.

The Business Office or headquarters of our Society have been too small and inadequate for many years. Your preceding President, Dr. W. C. Caudill, appointed a Committee a few months ago to search for a suitable home, a place to house all the business offices for some time to come. This Committee has been at work. I am continuing that Committee, hoping they will meet with success in the near future.

We hear much about the increased cost of medical care. This increased cost is not due to professional services alone, but to increased cost of hospital services and drugs; in the final analysis, it all can be traced to increase in labor costs. What is the answer? Prepaid medical care and hospitalization. Every local society should encourage the sale of some form of prepaid medical care and hospitalization, whenever possible. I suggest that each local medical society appoint a committee to promote these plans.

The time has come when the public should feel free to discuss medical fees with his or her doctor. One has just as much right to inquire what an operation, delivery or any professional service will cost before entering into a contract or engaging a physician for certain services, as he has on entering a store and inquiring the price of any article for sale, and should be encouraged to do so. When this is done in a helpful manner, it will go a long way towards relieving hard feelings and misunderstandings concerning what the public considers over-charging. An approach to this should be made on a local level. A fee that is considered reasonable in Roanoke, Norfolk or Richmond might be considered exorbitant in other sections of the State; the expense differential seems obvious. This should be considered seriously by public relations committees, both State and local. I hope they will see fit to discuss it freely in the news and editorial columns the coming year.

I have been advised by one of the members of the Board of Medical Examiners that they are not at all satisfied with the present Medical Practice Act. I am also informed that we have one of, if not the best, Coroners System in this country, which is mainly a product of this Society. Why cannot we have an Examiners System second to none?

The present Medical Practice Act was passed in 1944. This legalized chiropractic and naturopathy as branches of the healing art. It also put two chiropractors and one naturopath on the Board of Medical Examiners. They examine their own men, but have equal standing of any other M.D. on the Board in all scientific discussions. They are enjoying much prestige from their association with scientific medicine as bestowed upon them through the law and point with great pride to the certificates on their walls signed by the President and Secretary of our State Board of Medical Examiners as M.D.'s. Some feel that there should be two separate and distinct Boards set up by the Legislature. This matter will be referred to our Legislative Committee and our attorney for study and action. Would those of you who are interested in this subject please discuss this or present your views on it to some member of the Legislative Committee. As the Legislature does not convene until 1952, you have a little over a year to study and lay your plans.

One of my main objectives for the coming year is a special assignment for the Tuberculosis Committee. There are reasons to believe that the tuberculous patients in our mental and penal institutions are not being properly handled to prevent a universal spread of the disease among the inmates and personnel of the institutions. I shall request this Committee to make a survey or inspection of the State mental institutions, penitentiaries and jails of the larger cities and make its report to this Society with recommendations. This plan has been discussed with one of the heads of our tuberculosis sanatoria and with the Health Commissioner.

I feel it my duty to discuss the position of the

Negro physicians licensed to practice in the State. According to the State roster, there were 146 as of July, 1949. They are anxious to join our local and State Societies, which will make them eligible to membership in the American Medical Association. I feel that they are justified in their ambitions and request. There appears to be nothing in the Constitution or By-Laws of the local medical societies to exclude them from membership. They must qualify and be recommended by the Membership Committee, a two-thirds vote of the members present at any business meeting is necessary for election.

However, there is a clause in the State Constitution which states that only white physicians may become members. This puts the Negro physicians in our State at a great disadvantage. They cannot enter the big clinics for post-graduate work because they are not members of the A.M.A. They cannot join any of the special organizations for the same reason. I recently had two applications from two colored physicians in this State to join the American College of Chest Physicians; they had met all qualifications in training, clinical experience and post-graduate work, but had not been permitted to join their local and State Society which was a prerequisite. A few months ago, the President appointed a Committee, headed by Dr. Vincent W. Archer, to study this problem, suggesting a way to circumvent this clause and submit a report.

Recently I mailed a questionnaire to the 146 colored physicians licensed to practice in the State asking the following questions:

1. What preliminary education did you have before beginning to study medicine?
2. Where did you get your M.D. degree?
3. Did you serve an internship before entering practice?

I received 96 replies: 49 of these had either an A.B. or B.S. degree before going into medicine; 46 had at least two years of college training. All got their M.D. degree out of the State. All but 8 served an internship before starting the practice of medicine. Gentlemen, I dare say that if a poll were taken of our membership, the preliminary training would not average near as high.

There is another side to this question. As a public health measure we need more Negro physicians and we need to keep them better trained after they start to practicing medicine. The Negro population of Virginia, as of January 1, 1949, estimated by the University of Virginia's Bureau of Population and Economic Research, was 710,362; this is almost five thousand Negro people to each Negro physician, 4,865 to be exact. A small percentage of the more successful and prominent Negroes are treated by white physicians, but the vast majority are treated by Negro physicians or in free clinics at public expense.

There are several institutions in this State that admit only Negro patients, yet, they are served by white interns. If these were served by Negro physicians, it certainly would help give the Negro physician a better idea about tuberculosis and venereal disease control which is so prevalent among this group.

A post-graduate course given for two weeks each year at the Medical College of Virginia for Negro physicians is rendering a great service. I am told by Dr. Hamilton Francis, who has been President of that group since the course was started many years ago, that they have had an average attendance of 30. He states that this course has been a blessing to the Negro physician.

The Legislature this year appropriated $10,000 for ten scholarships to Meharry, provided that on graduation the physicians agree to practice medicine in the rural section of the State for such a period of time as he received this financial assistance. It naturally follows that we are obligated to give him a better professional standing in other states. Being physicians as we are, they should be treated as such. I refer this matter to the Department of Clinical and Medical Education for special consideration.

I wish to commend, and we should encourage the teaching program which is being conducted by the staffs of our general hospitals for interns and residents. All members of the visiting staffs should be invited to attend these clinic sessions. It would be well for the smaller hospitals throughout the State to start such a program, even though they occasionally had to invite outside physicians to conduct the clinic.

Of each member of the Medical Society of Virginia, I wish to solicit full cooperation in helping to carry on this program. Suggestions such as you can give are essential to a successful year. Anytime I can be of any assistance to any component society, or in the affairs of our profession, I should want you to call on me.

C. L. HARRELL, M.D., Norfolk
President, Medical Society of Virginia

EDITOR'S NOTE: Address by President in assuming office at the meeting of the Medical Society of Virginia, October 11, 1950.

SOCIETY PROCEEDINGS

The Augusta County Medical Association

Held its regular quarterly meeting at Garden Center, Gypsy Hill Park, Staunton, September 6. Following cocktails and dinner at 6:00 p.m., there was a short business session, after which "The Red Cross Blood Program" was presented by Dr. John Whitney, head of the Eastern Area Blood Program.

New officers of the Association are: President, Dr. Richard P. Bell, Jr., Staunton; vice-presidents, Dr. James L. Davis, Waynesboro, Dr. J. Granville Crawford, Staunton, and Dr. Harry F. White, Fishersville; secretary, Dr. William G. Painter, Mt. Sidney; treasurer, Dr. Boyd H. Payne, Staunton; and censor, Dr. Chas. L. Savage, Waynesboro.

Roanoke Academy of Medicine.

At the meeting of the Academy on October 2, reports of officers and committees for the past year were presented, after which the new officers were installed, including Dr. E. G. Gill as president, and Dr. S. F. Driver as secretary. Both are of Roanoke. Dr. Gill then gave his presidential address.

The Southwestern Virginia Medical Society

Held its regular Fall meeting September 28, at Governor Tyler Hotel, Radford, the president, Dr. Harry Hayter of Abingdon, presiding. There were fifty-eight in attendance at the afternoon program and one hundred and thirty-five at the banquet. Thirteen new members were admitted to the Society.

At the afternoon session, the following papers were presented:

Chronic Diseases—Dr. Fred Heath, Blacksburg.

The Surgical Correction of the Deformed Obstructed Nose—Dr. F. D. White, Roanoke.

Subarachnoid Hemorrhage from Intercranial Aneurysms—Dr. William P. Tice, Roanoke.

Following a business session at which routine matters were discussed, the following were elected officers for 1950-51: President, Dr. James P. King, Radford; vice-president, Dr. Andrew F. Giesen, Radford, who has served the Society for several years as secretary-treasurer; and his successor, Dr. Richard C. Potter, Marion.

A movie, The Balance of Food and Energy, was then presented by the Upjohn Company. A social hour preceded the banquet after which Dr. Parson of the Department of Internal Medicine at the University of Virginia spoke on Obesity, and Dr. Robert C. Lynch of the Department of Surgery, Tulane University School of Medicine, New Orleans, gave a talk on The Present Approach to the Adenomata of the Thyroid.

Bristol, Virginia, was selected as the meeting place for May 1951.

Williamsburg-James City County Medical Society.

The September 15 meeting of this Society was called to order by the President, Dr. Eleanor Beamer-Maxwell, after a social dinner at the King and Kay Tea Shop in Williamsburg. A matter of special importance presented was a wire from the President of the State Society for information as to Medical Reserve Officers and other doctors in the community, should it be necessary to call them into military service. The secretary had answered this. Following the business meeting, Dr. Carlton J. Casey, a member who is on the staff of the Veterans Administration Hospital at Kecoughtan, projected and discussed a series of color transparencies of eye grounds. A number of questions were asked in regard to these.

Dr. Granville L. Jones of Williamsburg is secretary.

The Wise County Medical Society

Held its regular bi-monthly meeting at Norton Hotel in Norton, September 20th. There were twenty-one members present for "Dutch" country style steak dinner and the program.

The Society raised the annual membership dues from $3.00 to $5.00 per year with $10.00 initiation fee for new members after January 1, 1951. Dr. W. J. McGee of Keokee was elected to membership.

Dr. Alexander McCausland of Roanoke very ably addressed the Society on asthma, cause and treatment, with some remarks on ACTH, and Cortisone. Slides added greatly to the interest. Besides Dr. McCausland, the Society has been fortunate this year in having as guest speakers: Dr. Roy Hoover, Roanoke, and Drs. Herbert Acuff and W. M. Overholt of Knoxville, Tennessee.

Wise County Medical Society is one of the most active component units of State Medical Society, west of Roanoke, its attendance averaging eighty per cent of its membership.

Dr. W. B. Barton of Stonega is president and Dr. J. D. Culbertson of Coeburn secretary.

NEWS

The Medical Society of Virginia

Had a most excellent meeting at the Hotel Roanoke in Roanoke, October 8 to 11, under the presidency of Dr. W. C. Caudill of Pearisburg. There was a registered attendance of over six hundred physicians, practically two hundred ladies, and over a hundred exhibitors, making a total of more than nine hundred. Much credit is due Dr. George S. Hurt and his able committee for their splendid work in making this meeting most successful.

The business sessions were interesting, the papers of a high character, and the exhibits, both scientific and technical, were all well worthwhile. Three awards were made to those presenting scientific exhibits: Drs. J. W. Devine, Sr., and Jr., of Lynchburg; Dr. William R. Sandusky of the University of Virginia and to Dr. Lee E. Sutton of the Medical College of Virginia.

At the closing session of the Society, Dr. C. Lydon Harrell of Norfolk was inducted into office as the next president of the Society. Those elected by the House of Delegates to serve with him are: President-elect, Dr. John T. T. Hundley of Lynchburg; vice-presidents, Dr. George S. Hurt of Roanoke, Dr. S. K. Ames of Cape Charles, and William R. Pretlow of Warrenton; and secretary-treasurer, Henry S. Johnson (re-elected), Richmond. The only change in councilors was the election of Dr. Frank A. Farmer of Roanoke for the Sixth District, succeeding Dr. Hundley. Dr. J. Morrison Hutcheson of Richmond was re-elected as one of the delegates to the A.M.A., with Dr. Carrington Williams, Sr., of Richmond as alternate.

Dr. J. D. Hagood of Clover was selected as the general practitioner of the year to be nominated for that honor to the American Medical Association at its clinical session.

Virginia Beach was selected as the 1951 place of meeting.

The Southern Medical Association

Is to hold its annual meeting in St. Louis, November 13-16, under the presidency of Dr. Hamilton W. McKay of Charlotte, N. C. General headquarters will be the Kiel Municipal Auditorium, where all meetings, scientific and technical exhibits will be housed. Several affiliated associations will hold meetings conjointly. St. Louis has available for this meeting a large number of first class rooms. For help in getting located, however, you may write the Housing Bureau, Southern Medical Association, 911 Locust Street, Room 406, St. Louis 1, Missouri.

The subscription dinner will be held on Tuesday. This will be followed by entertainment and a dance and the evening will be given over to pleasure. All activities at the Kiel Auditorium will be available to physicians who are members in good standing of their local and state medical societies, upon presentation of their membership cards. There is no registration fee.

The A.M.A. Clinical Session

Which will be held in Cleveland, December 5-8, is designed primarily for the general practitioner. The scientific sessions and the scientific and technical exhibits will be presented in the Cleveland Municipal Auditorium. Meetings of the House of Delegates on December 5 and 6 will be at the Statler Hotel and are open to all members and visitors in related fields.

Clinical sessions will be limited in attendance so that general practitioners may enter into the discussions and inquire about their own problems. The scientific exhibits will offer special demonstrations and the technical exhibits will feature the latest developments in drugs, equipment, books and allied medical products. Television will have a prominent place on the program.

The annual General Practitioner Award will be presented to the doctor selected by the House of Delegates from nominations made by State medical societies.

Last year's Clinical Session in Washington attracted over 4,000 doctors from every part of the United States and an increased attendance is expected this year.

Preceding the Clinical Session of the American Medical Association, a Public Relations Conference will be held at Hotel Statler, Cleveland, on December 3 and 4. The program calls for four work sessions—two each day. In attendance at these sessions should be some 300 doctors who are chairmen of State and county medical society Public Relations

committees, executive secretaries and Public Relations directors, officers of the A.M.A. Woman's Auxiliary, and representatives of other allied health organizations.

The Southern Electroencephalographic Society

Will meet in Williamsburg on November 27th and 28th. This meeting is in association with the Southern Psychiatric Society and will be held at the Williamsburg Inn. The presiding officer of the Society is Dr. Samuel C. Little. All local doctors interested in EEG are invited to attend the scientific session.

Medical College of Virginia News.

The School of Medicine in September matriculated 363 students, 84 in the first year class. All but 10 are Virginians. The upper class enrollment is somewhat larger than usual. Total college enrollment in all schools and departments, graduate and undergraduate, is 1419.

Dr. and Mrs. Everett I. Evans, Dr. and Mrs. George Z. Williams, Dr. Ernst Fisher and Dr. Robert Waller attended important scientific meetings and conferences in Europe during the past summer.

Dr. Isaac A. Bigger, professor of surgery at MCV, was paid tribute by 40 of his former residents for his 20 years of service to the college in an impressive and delightful program on September 22. The ceremony was held in Baruch Auditorium.

At this time a portrait of Doctor Bigger was presented to the college. The painting was done by Charles Hopkinson of Massachusetts. Dr. W. T. Sanger, president of MCV, accepted the portrait which will likely be hung in George Ben Johnston Auditorium.

A refrigerator for his office and a radio, television, phonograph combination were presented to Doctor Bigger by his former residents. Representatives of the Department of Medicine presented him with a set of silver goblets.

World Health Organization during the past summer referred two visitors in this country to the college for study and observation, Dr. Chavali Vyag of India in the Physical Medicine Department and Dr. Ernesto Saldias of Chile in the Department of Pediatrics, section on poliomyelitis. Dr. Randolph Batson of Vanderbilt University Medical School also looked in on the work in poliomyelitis recently.

Construction has started on a new addition to the Brown-Sequard Laboratory which is used for experimental work associated with animal studies.

The Richmond Eye Hospital, including ear, nose and throat services, will shortly go under construction in the 400 block North Twelfth Street. Tunnel connection with the rest of the college has almost been completed. This hospital will be under a separate self-perpetuating board but has a long-term contract of affiliation with the college.

The college library circulated 4,522 more books last year than the year before. Such books are loaned widely to members of the profession over the State as well as being circulated in Richmond.

Benjamin S. Andrews, director of speech and hearing rehabilitation for the Virginia Society for Crippled Children, now has offices located in Memorial Hall, formerly Memorial Hospital. His service will be State-wide as well as local.

The handsomely remodeled residence at 1006-08 East Marshall Street, lately occupied by senior nurses of the college, has been named Nannie Minor House for a beloved Virginia nurse, alumnus of the college, and daughter of the distinguished law professor, John B. Minor, of the University of Virginia.

President W. T. Sanger reported gifts, grants and bequests for the year ending June 30, 1950 of $847,-445.46; these items for the first two and one half months of the current fiscal year amounted to $99,-526.63, all exclusive of State tax funds.

The Graduate Lecture Program

Of the University of Virginia Medical School was commenced on Monday evening, September 25. The program is for House Officers and the Staff of the University of Virginia Hospital, and is open to Virginia physicians without charge. There will be two series of twelve lectures each, the first being from September 25 through December 11. There will then be an intermission of seven weeks on account of the Christmas recess and mid-year examinations, the

second series starting on February 5. Unless otherwise indicated, all lectures will be given at 8:00 p.m., in the Nursing School auditorium, McKim Hall. Further information desired may be obtained from Dr. Douglas E. Bragdon, corresponding secretary for the Lectures.

Lectures yet to be held in the first series with the guest speakers are:

November 6—Dr. W. C. Hueper, Cancer Control Branch, U. S. P. H. S.—Industrial Carcinogenesis

November 13—Dr. Shields Warren, Director, Division of Biology and Medicine, U.S. Atomic Energy Commission—The Acute Radiation Syndrome and Its Therapy

November 20—(Alpha Omega Alpha Lecture) Dr. Chester Jones, Massachusetts General Hospital —The Problem of Nutrition After Gastroenterological Surgery (tentative subject)

November 27—(Staige D. Blackford Memorial Lecture) Dr. Robert S. Palmer, Massachusetts General Hospital—The Rationale of Current Therapy for Essential Hypertension

December 4—Dr. Joseph E. Moore, The Johns Hopkins School of Medicine—An Evaluation of Public Health Measures for the Control of Syphilis

December 11—Dr. John H. Gibbon, Jr., Director of Surgical Research, Jefferson Medical College, Philadelphia—The Present Status of Mechanical Heart and Lung Machines

Dr. Hiram W. Davis,

Class of '42, Medical College of Virginia, has been appointed superintendent of Huntington (W. Va.) State Hospital, to fill the vacancy caused by the death of Dr. E. F. Reaser last July. Dr. Davis has recently been at McGuire Veterans Administration Hospital, Richmond.

Dr. William E. Apperson,

For some time a member of the staff of Blue Ridge Sanatorium, Charlottesville, has accepted the position as medical assistant to the State director of the division of tuberculosis control, and is now making his home in Richmond.

New Medical Chief at Kecoughatan.

Dr. Paul Baird has been named chief of professional services at Kecoughatan Veterans Home near Hampton, succeeding Dr. Merrill Fox, who has been transferred to Lake City, Florida. Dr. Baird is a 1935 graduate of Tulane Medical School and has been transferred from Baltimore.

Fellowships in Industrial Medicine.

The Institute of Industrial Health of the University of Cincinnati will accept applications for a limited number of fellowships which are being offered to qualified candidates who wish to pursue a graduate course of instruction which will qualify them for the practice of Industrial Medicine. Candidates who complete satisfactorily the course of study will be awarded the degree Doctor of Industrial Medicine.

Any registered physician, who is a graduate of a Class A medical school and who has completed satisfactorily two years of residency (including internship) in a hospital accredited by the American Medical Association may apply for a Fellowship in the Institute of Industrial Health. The course of instruction consists of a two-year period of intense preliminary training in the basic phases of Industrial Medicine followed by one year of practical experience under adequate supervision in industry. During the first two years, the stipends for the Fellowships vary from $2,100 to $3,000. In the third year the candidate will be compensated for his service by the industry in which he is completing his training.

Requests for additional information should be addressed to the Institute of Industrial Medicine, College of Medicine, Cincinnati 19, Ohio.

Tuberculosis Association News.

Dr. Charles P. Cake of Arlington was elected president of the Southern Trudeau Society and Miss Nora Spencer Hamner of Richmond was elected president of the Southern Tuberculosis Conference at the recent meeting held in Roanoke.

Representatives from 15 Southern States and the District of Columbia attended the three day meeting for discussion of the public health, medical and social aspects of tuberculosis and one session on the financing of voluntary tuberculosis associations through the sale of Christmas Seals.

Miss Hamner, the first Virginia woman to hold the office of president of the conference, announced the official opening of the 44th annual Christmas Seal Sale as of November 20.

Dr. John F. Woodward,

Who practiced ophthalmology for many years in

Norfolk until his retirement in 1942 to locate in Ivanhoe, North Carolina, has returned to Virginia and is now living at Virginia Beach.

Dr. Frank B. Truesdell

Has been elected president of the Richmond Choral Society, an organization in which he has always taken an active part.

Dr. Richard A. Bagby,

Class of '43, Medical College of Virginia, announces that he is located at 509 Bay Street, Tampa, Florida, for the practice of otolaryngology.

The Society for Investigative Dermatology,

At its last annual meeting, elected the following officers for the coming year: President, Dr. Marion B. Sulzberger, New York; Vice-President, Dr. Nelson Paul Anderson, Los Angeles; Secretary-Treasurer, Dr. Herman Beerman, Philadelphia; Director, Dr. Chester N. Frazier, Boston.

At this meeting, the Society selected Atlantic City as the place for their next annual two-day meeting in 1951.

Southeastern Allergy Association.

The sixth annual meeting of this Association will be held at the Vinoy Park Hotel, St. Petersburg, Florida, January 20-21, 1951. Reservations are to be made individually with the Hotel, which is on the American plan.

A panel discussion of Allergic Chest Diseases will be under the direction of Dr. Raymond Arp. Dr. Clarence Thomas will head the panel on Rhinological Allergy. Dr. Harold Abramson, president-elect of the American College of Allergists, and Dr. Horace Baldwin, vice-president of the American Academy of Allergy, have been invited to be guest speakers.

There will be a "Stump the Experts" program this year. Dr. Clarence Laws will be the "ring master". Bring your "problems" or "$64.00 questions" to the meeting and hear what the "experts" have to say.

A cocktail party and banquet will be held at the Vinoy Park Hotel. Further information may be had from the secretary, Dr. Katharine Baylis MacInnis, 1515 Bull Street, Columbia, S. C.

News from the University of Virginia Department of Medicine.

Dr. Albert A. Fisk has joined the faculty of the Department of Medicine, University of Virginia, as assistant professor of biochemistry. Dr. Fisk is a graduate of Harvard College and the School of Medicine, Yale University, where he held the Junior Brown Fellowship in Pathology. In 1948-1949, he was American Cancer Society Fellow at the Massachusetts Institute of Technology and, during the past year, he has been engaged on studies in protein chemistry under Dr. Linus Pauling at the California Institute of Technology.

Dr. Grover C. Pitts has been appointed assistant professor of physiology at the Department of Medicine, University of Virginia. Dr. Pitts received his Ph.D. at Harvard University in 1943 and has been associated with the Harvard Fatigue Laboratory and the Naval Medical Research Institute.

Construction has been started on an addition to the Department of Medicine, University of Virginia, which will provide additional laboratory space for the Departments of Biochemistry, Pharmacology, Physiology, Pathology, Microbiology, Internal Medicine and Surgery, as well as new animal quarters, classrooms and an auditorium to seat 240. The total project, including equipment, will cost approximately $950,000. Construction of a unit for cancer teaching and research, costing approximately $250,000 is also under way.

Dr. Dudley C. Smith, Professor of Dermatology and Syphilology, University of Virginia, died on August 30th.

Dr. Cary N. Moon, Instructor in Otolaryngology at the University, has been granted a leave of absence for military service.

The following grants from the National Institute of Health have been recently received by the Department of Medicine, University of Virginia; $24,829 for cancer teaching; $4,968 for studies on the effects of hyaluronidase upon the course of tuberculosis in rabbits treated with streptomycin, under Drs. J. R. Cash and S. W. Britton; $2,592 for studies on trace elements in human blood, under Dr. B. S. Leavell; $9,093 for studies on the effect of CNS depressants on metabolism, under Dr. C. L. Gemmill; $17,500 for the training program in psychiatry, under Dr. D. C. Wilson.

The Piedmont Proctologic Society,

Composed of specialists from Virginia, North and

South Carolina, Tennessee and Georgia, at its annual meeting in Hendersonville, N. C., August 26, elected Dr. C. R. Deeds of Hendersonville as its new president; Dr. J. M. Stockman of Knoxville, Tenn., was made vice-president; and Dr. C. S. Drummond of Winston-Salem was re-elected secretary-treasurer. The next meeting of the Society will be on March 31, 1951 at Knoxville, Tennessee.

Prize Essay Contest.

The American Dermatological Association is offering a prize of three hundred dollars for the best essay submitted of original work, not previously published, relative to some fundamental aspect of dermatology or syphilology.

Manuscripts typed in English with double spacing as for publication, together with illustrations, charts and tables, are to be submitted in triplicate not later than February 1, 1951. Further information regarding the essay may be obtained from Dr. Louis A. Brunsting, Secretary, American Dermatological Association, 102-110 Second Avenue, Southwest, Rochester, Minnesota.

On City Board of Health.

Dr. M. Pierce Rucker has been elected chairman of the Richmond Board of Health, succeeding Dr. B. H. Martin, resigned. Dr. Harry J. Warthen has been named to fill Dr. Martin's unexpired term.

Dr. James A. Smith,

A native of Ohio and a graduate of the George Washington Medical School, has been appointed in charge of the Page-Warren-Shenandoah Health District and has entered upon his duties with offices at Luray. He was recently with the U. S. Public Health Service in Galveston, Texas.

Basic Science Board.

Governor Battle has appointed Dr. Carl Speidel of the University of Virginia, and Dr. Frank Apperly and Dr. Sidney Negus of the Medical College of Virginia, as members of the Basic Science Board of the State Board of Medical Examiners. They will furnish examinations for the licensing of chiropractors and naturopaths in Virginia.

The American College of Chest Physicians

Offers a cash prize award of $250.00 to be given annually for the best original contribution, preferably by a young investigator, on any phase relating to chest disease. The prize is open to contestants of other countries as well as those residing in the United States. The award will be made at the next annual meeting of the College in Atlantic City, June 7-10, 1951.

Detailed information about the contest may be obtained from the Executive Office of the College, 500 North Dearborn Street, Chicago 10, Illinois.

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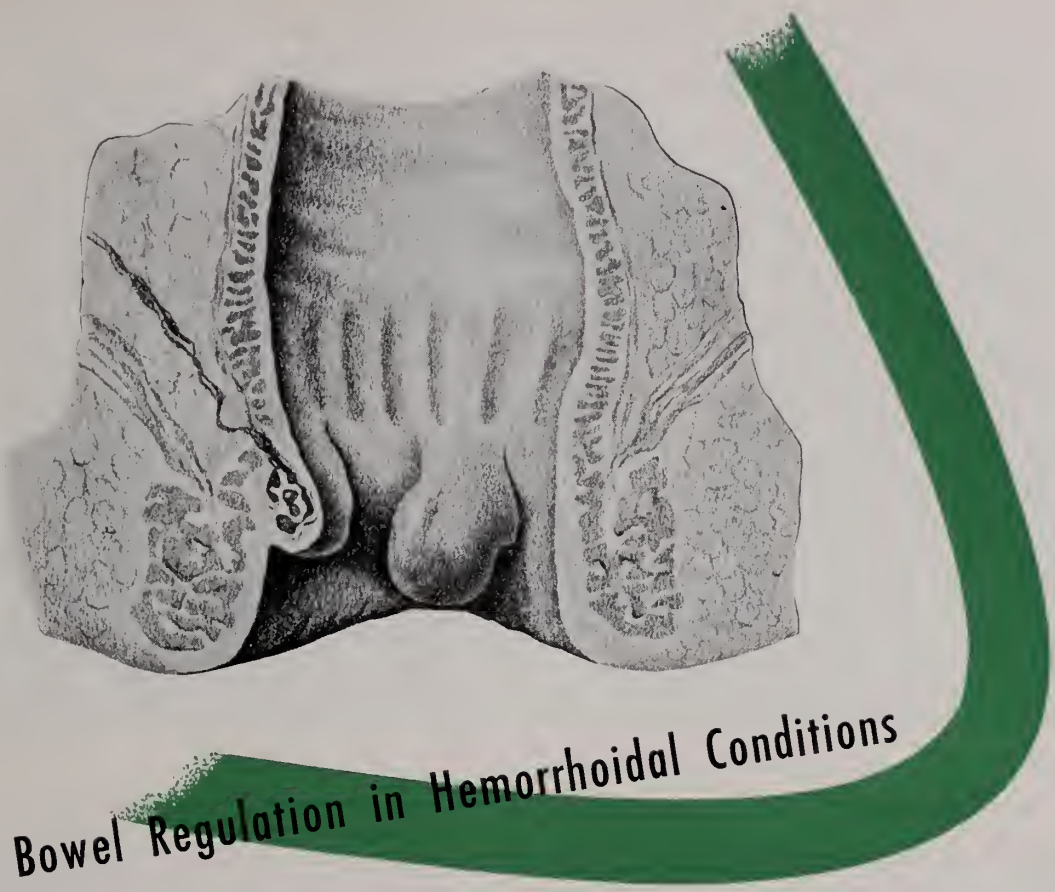
OBITUARIES

Dr. Henry Martin Snead,

Columbia, died October 8, after an illness of several months. He was sixty-five years of age and a graduate in medicine from the former University College of Medicine, Richmond, in 1907. Dr. Snead had practiced in Petersburg for a number of years before giving up private work and accepting the position as health officer with the State Department of Health. He was a former president of the Petersburg Medical Faculty, a member of the Fourth District Medical Society and was for some years a member of the Medical Society of Virginia. His wife, two daughters and a son survive him.



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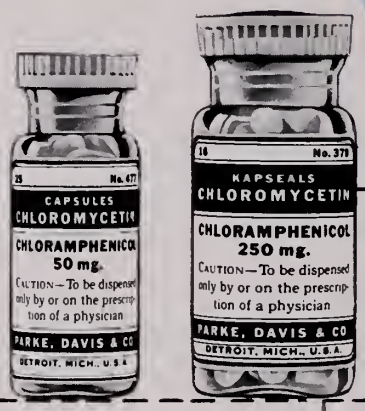

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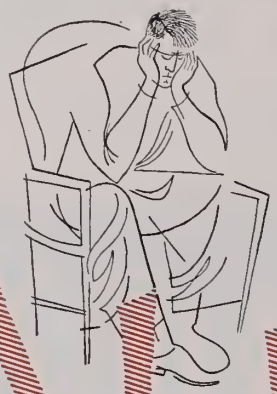

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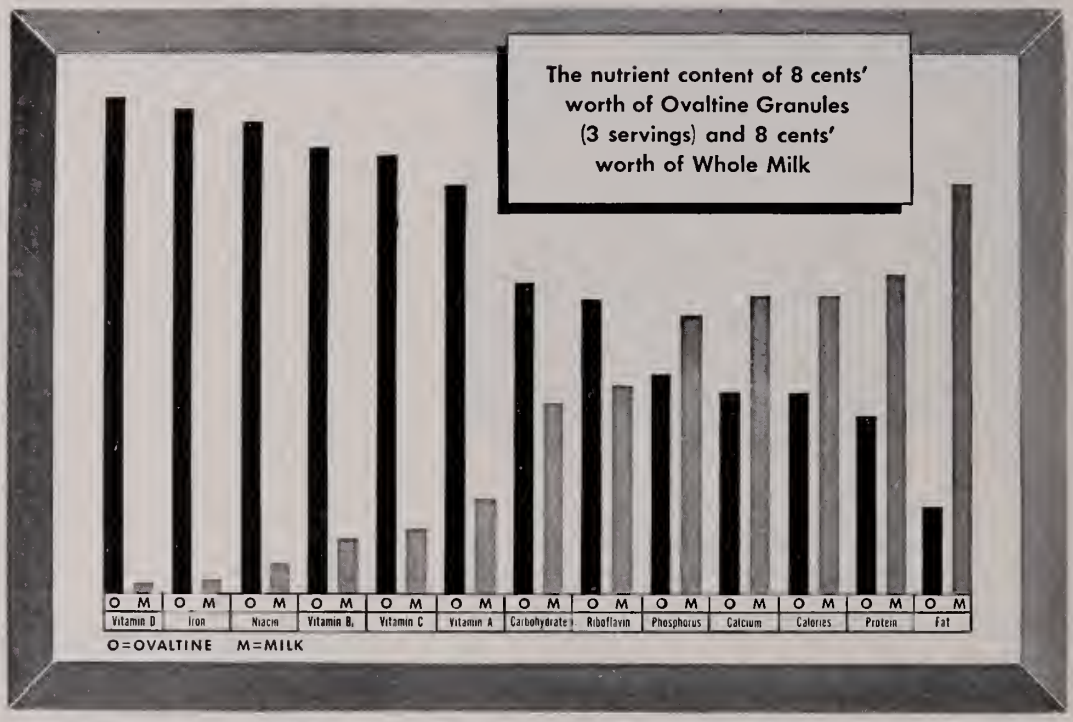

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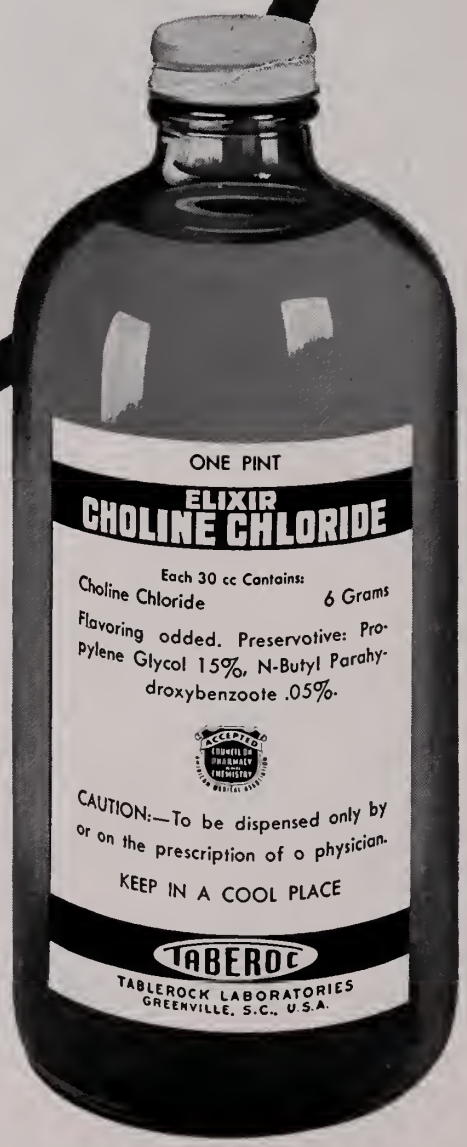

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RICHMOND, VA., DECEMBER, 1950

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GUEST EDITORIAL

Medicine, Mobilization and Manpower

INTENT upon remaining at peace, the United States, as a matter of national policy, has determined that, under current world conditions, one effective way of achieving that purpose is to remain strong through defense preparation. The primary basis of national defense and success in modern warfare has come more and more to rest on our potentials. The emphasis in defense preparations has shifted to the maintenance and improvement of those potentials. This approach provides greater assurance for increasing the national security, and at the same time it permits the fulfillment of peacetime objectives to which we are committed as a national policy.

Mr. W. Stuart Symington, Chairman of the National Security Resources Board, stated in his speech of October 25, 1950:

"Its first duty, by statute, is to 'advise the President concerning the coordination of military, industrial and civilian mobilization'.

"Its second, by Executive Order, is, with the approval of the President, to coordinate the defense activities of the various departments of the Government now working to make this country strong, to resolve interagency issues, prescribe policy and program directives, obtain reports and information on the status of work in said various agencies, coordinate related policies and activities among these agencies; and advise the President on the progress of the program."

A part of the job of the National Security Resources Board concerns policies and programs through which the nation can achieve an adequate state of readiness against the eventuality of a future war. These policies and programs relate to such matters as the stockpiling of strategic and critical materials, the training of skilled manpower, and the wide range of measures being undertaken currently to keep industry and the Armed Forces continuously prepared for possible emergencies. This readiness-planning job is designed to assure current actions without which the nation's resources might be inadequate to meet the requirements of war.

As the problems of health resources for both military and civilian needs in the event of national emergency are basic to any mobilization planning, there is a Health Resources Office as one of the nine basic offices of the National Security Resources Board. Dr. Norvin C. Kiefer is the Director. Other similar offices deal with such problems as production, materials, transportation, manpower, energy and utilities and similar areas.

The responsibilities of the Health Resources Office are:

a. Mobilization, allocation and utilization of all personnel necessary for wartime health services in public health work, hospitals, clinics, homes, military services, and similar functions; this personnel includes physicians, nurses, sanitary engineers, dentists, veterinarians, pharmacists, technicians and all other trained health personnel;

b. Environmental sanitation services, including water, food and milk sanitation; insect and rodent control; emergency housing and shelter sanitation; water pollution control; health aspects of sewage, refuse and waste disposal; sanitation on Common carriers; and similar activities;

c. Veterinary medical services, including the care of sick animals, the prevention of disease in our animal population, the prevention of spread of disease from animals to man, and the inspection of meat and other food products;
d. Utilization of health facilities, including hospitals, clinics, laboratories, suitable quarters for emergency health activities, and similar institutions and buildings;
e. Provision of all health equipment and supplies, medicinals and chemicals, biological preparations, and blood and blood derivatives;
f. Recommendations to assure maintenance of essential teaching and research in the health fields, including provisions for exemption from military service of certain categories of teachers and students;
g. Provision of professional leadership and direction to plans for the health aspects of civil defense.

In order to strengthen the work of this Health Resources Office, the Chairman of the National Security Resources Board this August, at the suggestion of the President, formed a Health Resources Advisory Committee. This committee consists of:

James C. Sargent, M.D., Professor of Urology, Marquette University, School of Medicine, Milwaukee, Wisconsin.

Harold S. Diehl, M.D., Dean of the Medical Sciences, University of Minnesota, Minneapolis, Minn.

Leo J. Schoeny, D.D.S., Chairman, Council on Dental Health, American Dental Association, 729 Maison Blanche Building, New Orleans, Louisiana.

Mrs. Ruth Kuehn, R. N., Dean, School of Nursing, University of Pittsburgh, Pittsburgh, Pa.

William P. Shepard, M.D., Professor of Public Health, Stanford University, San Francisco, California.

John B. Pastore, M.D., Executive Director, Hospital Council of Greater New York, 220 E. 42nd Street, New York, N. Y.

and

Chairman Howard A. Rusk, M.D., Professor and Chairman Department of Physical Medicine and Rehabilitation, New York University College of Medicine, New York, N. Y.

The Health Resources Advisory Committee is an advisory body and is concerned with matters which are the responsibility of the National Security Resources Board. Its secretariat is the Health Resources Office, which is responsible for the staff work of implementing those policies.

By Presidential direction, the Health Resources Advisory Committee also provides a forum for discussion and resolution of interdepartmental problems relating to utilization of national health resources, including hospitalization, health manpower mobilization and health services.

There has long been a need in the Federal government for a top-level agency which could provide policy decisions in matters of federal medical services in which not only government, but civilian and professional thought could be represented. Formed because of the urgency of mobilization planning, the Health Resources Office and the Health Resources Advisory Committee of the National Security Resources Board now provide such a mechanism. The responsibilities are great, and if properly executed, should have significant implications for the best possible utilization of all our health resources not only in mobilization, but under ordinary peacetime conditions as well.

HOWARD A. RUSK, M.D.

Dr. Rusk is Professor and Chairman of the Department of Physical Medicine and Rehabilitation, New York University College of Medicine, and Chairman of the Health Resources Advisory Committee to the National Security Resources Board.

MUTUAL SUPPORT FOR SURVIVAL MEDICAL PLANS FOR CIVIL DEFENSE AND DISASTER RELIEF†

William L. Wilson,* Colonel, Medical Corps,
Special Assistant to The Surgeon General, Department of the Army, Washington, D. C.

"Men will find that they can prepare with mutual aid far more easily what they need, and avoid far more easily the perils which beset them on all sides, by united forces." This three-hundred-year-old statement by Spinoza[1] might well be our guide for modern civil defense.

Recent publications cover sufficiently for the moment the local problems which would be created for a city immediately within a disaster incident area, particularly if caused by an atomic attack. My objective, therefore, as suggested to me, will be a discussion of some broadening problems faced by a nation whose cities might continue under attack, along with a few proposed "mutual aid" methods for applying local resources to maximum national advantage.

"Mutual support" is an intricate combination of various forms of civilian aid between communities. It involves not only readiness for immediate dispatch of mobile functional units and transfer of mobile material means to other communities, but the reception of disaster victims from other areas as well, in order to provide them with relief, shelter, food, medical care, and other essentials to life and health. There is nothing new or insoluble in this concept, which can be simplified remarkably. On the other hand, an extraordinary amount of future civilian preparation by all of our communities would have to precede successful reception and care of thousands relocated by mass evacuations[2], while at the same time furnishing medical treatment to thousands of casualties in a disaster area, or elsewhere. It is because of the necessary long and careful preplanning that no modern nation may relax its vigilance until complete peace can be assured. In other words, civil defense is here to stay and it must be permanent for any nation in this era.

It would not be a phenomenon for a community to survive one enemy attack of the future. However, if World War II German experience means much, we may be sure that survival from repeated enemy attacks will require prearranged application of resources of many communities, at a time when they might be reduced by the war. In Germany no one city alone could handle adequately the problems created by saturation raids[3]. It is unlikely that any one of our States could do so now or in the future.

All essential daily health services of our communities must continue under a plan that would avoid the perils which could beset us on all sides. Hence, we should prepare with mutual aid what we need for the added medical burdens of two broad groups of emergency services, made necessary solely by a disaster. Many details of these emergency services have been discussed elsewhere previously, so we may hurry on as we recall that they group themselves broadly into casualties services [4,5], and public health services[6], while requiring special administrative considerations for atomic and other modern attacks[7], as well as for industrial preparedness[8]. Providing these necessary emergency services would curtail the essential services of the community. Therefore it is all-important that assistance come from other communities before a community, or a part of its essential services, might break down. This should result in utilization of all available civilian resources at the times and places required for the national survival. The Strategic Bombing Survey concluded[3] that this assistance could be supplied best by mobile reserves controlled by the national government, and so placed with respect to potential targets that they could enter stricken areas soon enough to participate effectively in their duties; and further, that the number and types of mobile reserves required should be determined by the likelihood of attack, vulnerability of the target, the forces available locally, and the assistance obtainable from other communities under mutual aid arrangements. The possible hazards of mutual aid and mobile support arrangements between communities and States without some national coordination have been recognized in our re-

*Personal views; suggestions contained herein imply no official sanction, approval, or policy.

†Presented by invitation before the Medical Society of Virginia at Roanoke, October 9, 1950.

cent national plan, under which regional offices would be established to serve as a link between a Federal civil defense agency and the State; the former would guide States, Territories, and possessions in working out operating procedures and arrangements for mutual aid and mobile support. This should reinforce such mutual aid and mobile support commitments and apply reserve resources best when national survival would require aid elsewhere.

Now it is one thing to generalize about these four important points of the Survey concerning mutual aid. It is quite another to provide immediately the realistic and reasonable answers to questions which should be answered to your satisfaction. In the first place, how accurately may we predict potential targets and their vulnerability? For that matter, who can be sure that the prime target will actually be hit instead of some nearby area? Next, can we predict the services permanently to be deployed in your State, or which of your reserve resources would be available to send elsewhere as needed? If so, exactly what would make up the mobile reserves, from whence would they come, and where would they be placed? How could they be moved? How could you assure their effectiveness? And, after all that, do we know what types, capacities, and sources of mobile support would exist to come in to your aid? Of course we do not at this time, and that is why your consideration of them will be invaluable.

These questions will have answers, but only after a long time and after expenditure of a great deal of effort, expense, and thought. All are the privileges of free citizens! Let us examine one practical example. How would you start in order to predict possible responsibilities of your State in such a complex scheme of mutual support? It is possible that you might have the only community hit by a disaster. On the other hand, an enemy attack could strike some other community only, or that other and your community simultaneously. You might find yourselves faced with necessary maximum self-help, if attacked, and also with necessary readiness to support other communities. You, of Virginia, have Washington and Baltimore at one end of your State, Tennessee at the other, Delaware, Pennsylvania, New Jersey and Ohio, and even New York City, within supportable distances. The Alexandria and Arlington medical societies have collaborated with the Medical Society of the District of Columbia for many months in development of medical planning for civil defense. This will, of necessity, extend to other areas also. It would be hazardous to continue much longer without standards for the measurement of your future readiness to care for your own problems or to aid in those of others.

The standards cannot be set independently nor reasonably without full consideration of the interrelationships which must exist between all of the mobile reserves from all communities, and also between them and our armed forces. Such standards doubtless will come from our civil authorities, but they have significance to military planners too. That is one reason why military men must be concerned with these many matters, occasionally identified as solely of civilian interest, responsibility, and right to develop. A military commander of a theater of operations has complete responsibility for civil defense in the area occupied by his forces. Furthermore, while civil defense is a civilian responsibility, the armed forces have some clearly delineated civil defense responsibilities[9] within the United States, without existence of a theater of operations.

Civilian communities and civil administrators must learn and coordinate their respective plans far beyond city or even State borders and long before the necessary operations are to be implemented. They and military authorities are jointly responsible for integrating civilian and authorized military plans for this. As an example, independent planning should not visualize treatment of civilian victims of disaster in nearby military or other Federal hospitals, except according to a preplanned system. And such planning might not be feasible.

Twelve of our cities concentrate forty-two million people within their metropolitan areas. Many of the 106 cities in the United States of more than one hundred thousand population might be reasonable targets of enemy attacks. Practically all civilian health means of the Nation are in these cities. Many of these would likely escape disaster and enemy attacks for years to come but others might not. On the other hand, some sure targets of attack of the highest priority might not be in these cities. Extensive disaster likely would produce victims in any of the cities, and at the same time, would upset, decrease, or eliminate local medical services, thereby creating a demand for mobile mutual support. So, repeating somewhat, no fewer than 106 communities of this country should

study problems pointed up by the Strategic Bombing Survey, vulnerability should be predicted for these cities and all other foreseeable targets, and reasonable mathematical estimates of potential damage and response undertaken. So long as we may revise such estimates at any time and wherever they can be shown to be inaccurate, there could be no harm in making a start. Any specific plan will suffice as a start. Perhaps an illustrative discussion with every community which should get ready would clarify some of our perplexing future difficulties and necessary actions. What direction might such a discussion take?

The first point, likelihood of attack, is over-simplified in Table 1. However, military and civilian planners of normal capabilities can list and apply many factors to this table to arrive at sound predictions. What forecast would we make for your own State, the District of Columbia, Baltimore, Pennsylvania, northeastern Tennessee, Ohio? Of twenty-two communities of over a hundred thousand in the region indicated, which, if any, would this table pin upon you; which would disaster select? Which would escape and take on the job of aiding other less fortunate communities?

TABLE 1 – LIKELIHOOD OF ATTACK
POTENTIAL SITUATIONS REQUIRING
CIVIL DEFENSE AND DISASTER RELIEF

PREPARED BY W L WILSON, COLONEL MC, U S ARMY, 1 MAY 1950

COMMUNITY OR PLACE OF DISASTER OR EVENT	COMMUNITY TO FURNISH INITIAL RELIEF HEALTH SERVICES	COMMUNITY REQUIRING SERVICES	SOURCE FOR ADDITIONAL HEALTH SERVICES WHEN OWN OVERWHELMED	COMMUNITY TO FURNISH TEAMS FOR SERVICES	COMMUNITY IN WHICH SERVICES MAY NEED TO BE PROVIDED
OWN ONLY	OWN	OWN ONLY	OWN EXPANDED OWN IMPROVISED ANOTHER COMMUNITY	OWN OWN OWN + OTHERS	OWN OWN OWN + OTHERS
OTHER ONLY	OTHER	OTHER ONLY	OTHER EXPANDED OTHER IMPROVISED OTHER + OURS	OTHER OTHER OTHER + OURS	OTHER OTHER + OWN OTHER + OWN
OWN & OTHER	OWN + OTHER	OWN + OTHER	OWN + OTHER EXPANDED OWN + OTHER IMPROVISED OWN + ALL OTHERS	OWN + OTHER OWN + OTHER OWN + ALL OTHERS	OWN + OTHER OWN + OTHER OWN + ALL OTHERS

Our second point, vulnerability of a target has been demonstrated clearly in Europe, in Japan[8], and now in Korea. Authorities agree that every nation is vulnerable to future attack by a powerful enemy[10,11]. But if some communities should be attacked or some not, the vulnerabilities of each would be reduced by a preliminary decision as to the likely priorities for furnishing mutual medical support between communities. Thus, systems would be predetermined and assured. Table 2 illustrates a simple method for undertaking this. It is not offered as an invariable guide and would have to be adjusted to changing local circumstances. Above all, we must appreciate fully the necessity for adapting our medical plans and future medical performances to over-all plans and operations. There is every need for closest collaboration with fire, police, rescue, engineering, communications, and many other services of each community, and their adaptation to medical plans as well. The latter was appreciated in Germany as indicated by the Survey finding[3] that next to fire protection, the emergency medical service was considered the most important division of the air-raid protection service. In brief, vulnerability increases or decreases with the readiness of the community to repair damage inflicted by an attack. And medical preparedness is one of the most important of all factors preplanned with a view to reducing vulnerability.

The third point of the Survey, the forces available locally, and the fourth, assistance obtainable from

TABLE 2

LIKELY PRIORITIES(a)
MUTUAL MEDICAL SUPPORT
CIVIL DEFENSE AND DISASTER RELIEF

PREPARED BY W. L. WILSON, COLONEL, M.C., U.S. ARMY, 1 MAY 1950

COMMUNITY	SOURCE OF NECESSARY HEALTH SERVICES (b)				POPULATIONS RECEIVED FROM OTHER COMMUNITIES		PATIENTS RECEIVED FROM OTHER COMMUNITIES TO BE CARED FOR
	WILL FURNISH OWN ONLY	WILL RECEIVE FROM OTHERS	WILL FURNISH OWN AND SEND AID TO OTHERS	WILL SEND AID TO OTHERS	TO AID BY SERVING	TO BE CARED FOR	
ATTACKED	I	II	III	IV	V	VI	VII
NOT ATTACKED	1	7	2	3	4	6	5

NOTES:

a. ROMAN NUMERALS HAVE PRIORITY OVER ARABIC NUMERALS; BOTH LOSE PRIORITY AS THEY INCREASE

b. APPROPRIATE CIVIL AUTHORITY LIKELY WOULD PRESCRIBE STANDARDS.

other communities under civil defense mutual aid arrangements, can be examined intelligently, only after developing some means for measuring adequacy, some standards of uniform nature. If such standards have ever been prepared they had not come to my attention in May 1950. Hence, it may be that a recent comprehensive list of suggested minimum medical standards for modern civil defense is our first in the United States.

Only condensed versions of far more original details are presented in Tables 3 to 9, inclusive. The original listing has stimulated comments from several experienced authorities, and resulted in extremely valuable suggestions toward improvement. The

TABLE 3 — TYPES OF SERVICES AND UNITS

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W. L. WILSON, COLONEL, M.C., U.S. ARMY, 1 MAY 1950

TYPE OF SERVICE REQUIRED	ZONE OF ACTIVITY	UNITS – TEAMS
CASUALTIES SERVICE	COLLECTING	MOBILE AID GROUPS: GENERAL, INDUSTRIAL AID STATION GROUPS: GENERAL, INDUSTRIAL
	EVACUATING	MOTOR AMBULANCE GROUPS
MEDICAL REGULATING SERVICE	ALL	REGULATING OFFICES
HOSPITAL SERVICES	ALL	CLEARING HOSPITALS GENERAL HOSPITALS CONVALESCENT HOSPITALS
MOBILE SUPPORT	ALL	SURGICAL, BURN, SHOCK, ORTHOPEDIC, TRANSFUSION, GENERAL THERAPY, NEUROSURGICAL, THORACIC, MAXILLO-FACIAL, GAS CASUALTY, PSYCHIATRIC, PREVENTIVE MEDICINE
MEDICAL SUPPLY	ALL	SUPPLY POINTS: LARGE BASE, SMALL BASE, INTERMEDIATE, LOCAL, OPTICAL REPAIR

TABLE 4 — CASUALTIES SERVICES

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W. L. WILSON, COLONEL, MC, U.S. ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM MEANS REQUIRED FOR ACTIVITY		
TYPE	PERMANENT (IN PLACE)	SUPPLEMENTARY	PERSONNEL	TRANSPORT	EQUIPMENT
AID GROUP (GENERAL SECTION) (INDUSTRIAL SECTION)	1 PER 5000 POPULATION	5 PER 100,000 POPULATION	4 LITTER BEARERS 2 AID PERSONNEL 6 DRIVERS 6 ATTENDANTS	2 AMBULANCES 1 CAR	1 LITTER PER GROUP 2 BLANKETS PER LITTER INDIVIDUAL AID EQUIPMENT
AID STATION GROUP (GENERAL SECTION) (INDUSTRIAL SECTION)	1 PER 25,000 POPULATION WITHIN 1 MILE RADIUS WHERE POPULATION LESS	2 PER 100,000 POPULATION	3 PHYSICIANS 3 CHAPLAINS 24 TRAINED TECH. 30 UNTRAINED ASST. 10 RECORDS CLERKS AND OTHERS DRIVERS AS REQUIRED	1 CAR 66 PASSENGER CAPACITY, BUS OR TRUCK SUFFICIENT TRUCKS FOR EQUIPMENT	LOCALLY ADJUSTED TO PRESCRIBED STANDARDS
MOTOR AMBULANCE GROUP	2 PER AID STATION	1 FOR EACH 3 GENERAL AID STATIONS 1 FOR EACH 2 INDUSTRIAL AID STATIONS	CHIEF OF GROUP 4 DISPATCHERS PER AID STATION 3 DRIVERS PER VEHICLE 3 ATTENDANTS PER VEHICLE 3 AUTO MECHANICS PER AID STATION	1 CAR (PERSONNEL) VEHICLE CAPACITY FOR 200 PATIENTS PER HOUR; 10 PERCENT EXTRA FOR BREAKDOWNS, ETC.	LOCAL MOTOR VEHICLES

figures shown must not be construed to be final or authoritative planning factors in the formulation of your detailed plans. The only purpose in presenting them here is to provoke your thought, and your action under the appropriate civilian leadership. As was suggested with reference to estimating vulnerability, we may and should revise, also, initially accepted standards when and where they can be shown to be unacceptable. You and other civilians may participate in the establishment and revisions of such standards by civil authority. The fact that an extensive and complex system may be simplified to this extent for ready study may elicit your confidence. After examining these tables, let us ask continuously

TABLE 5 — REGULATING SERVICES

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W. L. WILSON, COLONEL, M.C., U.S. ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM PERSONNEL MEANS REQUIRED FOR ACTIVITY	
MEDICAL REGULATING OFFICES AT	PERMANENT *(IN PLACE)*	SUPPLEMENTARY	PERSONNEL	TRANSPORT
AID STATIONS CITY-WIDE METROPOLITAN STATE-WIDE REGIONAL NATIONAL	ONE TO EACH OFFICE *(ALL PATIENT MOVEMENTS INTEGRATED WITH MILITARY MEDICAL REGULATING SERVICE)*	ALTERNATE FOR EACH OFFICE *(IN CASE PERMANENT ONE INOPERATIVE)*	CHIEF MEDICAL REGULATOR 1. SECRETARY-FILE CLERK AS SIZE AND RESPONSIBILITIES INCREASE, VARIOUS ADDITIONAL PERSONNEL REQUIRED	CARS — AS REQUIRED MOTORCYCLES AS REQUIRED MAINTENANCE VEHICLES

TABLE 6 — HOSPITAL SERVICES

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, M C, U S ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM MEANS REQUIRED FOR ACTIVITY	
HOSPITALS	PERMANENT *(IN PLACE)*	SUPPLEMENTARY	PERSONNEL	TRANSPORT
CLEARING GENERAL CONVALESCENT	ALL EXISTING CIVILIAN HOSPITALS MAXIMUM EXPANSION OF THE EXISTING HOSPITALS BY UTILIZING SPACE CONTROLLED BY HOSPITALS WITH EQUIPMENT UNDER CONTROL OF HOSPITALS IN HOSPITALS ELSEWHERE BY ESTABLISHING NEW HOSPITALS	FOR CIVILIAN DEFENSE CASUALTIES ONLY PLANT FACILITIES FOR TWENTY(20) PERCENT OF CITY AREA *(LESS SUBURBS)* *(STATED AS PERCENT OF POPULATION)* CLEARING — 4% GENERAL — 3% CONVALESCENT-13%	FOR LOCAL DETERMINATION	FOR LOCAL DETERMINATION

of ourselves whether they are reasonable. For example, they reveal that mobilizing the permanent local and mutual aid units for all 106 cities at one time could require civil defense services of almost all available physicians. What does that mean if the World War II number of 61,000 physicians should be in the armed services at the same time? By studying the propositions in this manner we may obtain acceptable answers. It would be unreasonable to predict a need for civil defense services in all 106 cities simultaneously. Another factor bringing us back to reasonable concepts is that many military physicians will be in this country. It would be reasonable to expect systematic allocation and immediate shifts

TABLE 7 — SPECIALIST SUPPORT TEAMS

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, MC, U S ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM PERSONNEL MEANS REQUIRED FOR ACTIVITY					
MOBILE SUPPORT SPEC. TEAMS	PERMANENT (IN PLACE)	SUPPLEMENTARY	SURGEONS	PHYSICIANS	NURSES	ANESTHETIST	OTHERS	ORDERLIES -CLERKS
SURGICAL	2 PER 100,000 POPULATION	4 PER 100,000 POPULATION	2	0	1	1	0	3
BURN	6 PER 100,000 POPULATION	12 PER 100,000 POPULATION	–	1	1	–	–	8
SHOCK	1 PER GEN HOSPITAL	1 PER 100,000 POPULATION	–	1	1	–	–	2
ORTHOPEDIC	1 PER 100,000 POPULATION	1 PER 100,000 POPULATION	–	2	1	1	–	3
TRANSFUSION	2 PER 100,000 POPULATION	1 PER 100,000 POPULATION	–	2	2	–	1	35
GENERAL THERAPY	---	2 PER 100,000 POPULATION	–	2	1	–	1	4
GAS CASUALTY	2 PER 100,000 POPULATION	1 PER 100,000 POPULATION	1	1	–	–	2	10
NEUROSURGICAL	---	48	2	–	1	1	–	3
THORACIC	---	48	2	–	1	1	–	3
MAXILLOFACIAL	---	48	2	–	1	1	–	3
PSYCHIATRIC	---	48	–	5	–	–	2	11
PREVENTIVE MEDICINE	---	48	–	1	–	–	6	12

TABLE 8—SUPPLY SERVICES

MINIMUM MEDICAL STANDARDS

(SUGGESTED)

FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, M C, U S ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM MEANS REQUIRED FOR ACTIVITY	
SUPPLY POINT	PERMANENT	SUPPLEMENTARY	PERSONNEL	TRANSPORT
LARGE BASE	1 PER 300,000 TO 500,000 POPULATION	1 PER 3 MILLION TO 5 MILLION POPULATION	24 SUPERVISORY 317 ALL OTHERS	# 50 TO 75 PERCENT OF TONNAGE/CUBAGE MAY REQUIRE MOVEMENT IN FIRST 24 HOURS # ALL TRANSPORT MUST BE PREVIOUSLY ALLOCATED & IMMEDIATELY AVAILABLE WITH DRIVERS
SMALL BASE	1 PER 100,000 TO 300,000 POPULATION	1 PER 1 MILLION TO 3 MILLION POPULATION	8 SUPERVISORY 68 ALL OTHERS	PERMANENT – AS LOCALLY REQUIRED FOR INCIDENTS SUFFICIENT FOR 1260 SHORT TON/156,000 CUBIC FEET OF SUPPLIES AND EQUIPMENT DURING 7-DAY PERIOD #SEE ABOVE
INTERMEDIATE	1 PER 25,000 TO 50,000 POPULATION	1 PER 25,000 TO 50,000 POPULATION	2 SUPERVISORY 30 ALL OTHERS	FOR INCIDENTS: SUFFICIENT FOR 210 SHORT TON/26,000 CUBIC FEET OF SUPPLIES AND EQUIPMENT DURING 7-DAY PERIOD #SEE ABOVE
LOCAL		1 PER 15,000 TO 25,000 POPULATION	2 SUPERVISORY 19 ALL OTHERS	FOR INCIDENTS: SUFFICIENT FOR 105 SHORT TON/13,000 CUBIC FEET OF SUPPLIES AND EQUIPMENT DURING 7-DAY PERIOD #SEE ABOVE
OPTICAL REPAIR	2 PER 50,000 POPULATION	2 PER 100,000 POPULATION	1 SUPERVISORY 6 ALL OTHERS	AS REQUIRED UNDER LOCAL CIRCUMSTANCES

of means between military and civilian employment when necessary. Simple schemes can be designed for circumstances favoring such actions[12-15]. Adequate medical leadership, conscientious management, voluntary performance under medical guidance by citizens who would have been taught their respective parts as auxiliary medical personnel, all would combine to bring success. But the exact design of standards or units for mutual aid is not our mission here. They are brought up with one idea, that nothing more than a quick inspection of them will convince the most reluctant, the least cooperative physician, society, or community that civil defense will be possible only with long, careful, conscientious study and

TABLE 9 - EQUIPMENT REQUIREMENTS

MINIMUM MEDICAL STANDARDS

(SUGGESTED)

FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, MC, U S ARMY, 1 MAY 1950

SERVICE	ZONE OF ACTIVITY	TYPE OF UNIT	MINIMUM EQUIPMENT MEANS REQUIRED FOR ACTIVITY
CASUALTIES	COLLECTING	AID GROUP	1 LITTER PER GROUP 2 BLANKETS PER LITTER INDIVIDUAL SETS FOR AID PERSONNEL, LITTER BEARERS, DRIVERS & ATTENDANTS SPECIAL BURN AND OTHER DRESSINGS WATER CANTEENS AND CONTAINERS
		AID STATION	50 LITTERS 100 BLANKETS COOKING & MESSING CLOTHING FOR PATIENTS RECORDS & REPORTING FORMS PLANT FACILITIES & SERVICES
	EVACUATION	MOTOR AMBULANCE GROUP	MOTOR FUEL, LUBRICANTS, SPARE PARTS, TIRES REPAIR TOOL SET 1 LITTER & 2 BLANKETS PER LITTER PATIENT CAPACITY PER VEHICLE
MEDICAL REGULATING	ALL	REGULATING OFFICES	OFFICE AND COMMUNICATIONS EQUIPMENT SUPPLIES REPORTING AND RECORDS FORMS
HOSPITAL	ALL	CLEARING HOSP. GENERAL HOSP. CONVALESCENT HOSPITAL	FOR TEN PERCENT OF POPULATION FOR INJURIES AS FOLLOWS: 6.5 % TRAUMA (*FRACTURE 1.5%, CONTUSIONS 3.0%, LACERATIONS 2.0%*) 6.0 % BURNS 2.5 % RADIATION
MOBILE SUPPORT & RESERVE *(MEDICAL)*	ALL	SPECIALIST TEAMS	AS REQUIRED BY TEAMS
MEDICAL SUPPLY	ALL	SUPPLY POINTS	MINIMUM ESSENTIAL FOR SUPPLIES HANDLED
		OPTICAL REPAIR	LOCAL FACILITIES

active participation by all. Consideration of these tables surely will convince the most optimistic person that we have many and tedious efforts ahead of us if we are to anticipate successful civil defense. Certainly none can deny that mutual aid can be developed only by such attention to our duties.

In summary, there have been presented sufficient details to illustrate the complexities of preparing for civil defense; these have indicated the fallacy of assuming that civil defense can be effectively provided within a short period of time; suggested preliminary standards for measuring readiness for civil defense in priority target areas have been listed; and an effort has been made to support the recommendation to you of a need for development and maintenance of mutual aid resources within your State.

The current absence of war, or the fact that enemy attack against our citizens may be no immediate threat, should not delay energetic development of practical means for civil defense and disaster relief. Can anyone assure us that mass evacuations will ever be unnecessary in peace as well as war? If not, we must be prepared for them. Once developed, civil defense may be maintained. Civil defense must become a part of civilian existence unless incontrovertible proof can be given that it will not be needed in the future. Who can provide that?

Civil defense is everybody's business. It should be designed and implemented by civilians, for civilians, under civilian direction and control. If not developed now under proper directions of responsible civil authorities, because we want to do that, it is conceivable that an opportunity to do so later might never be given us.

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PERNICIOUS ANEMIA: DIAGNOSIS AND TREATMENT*

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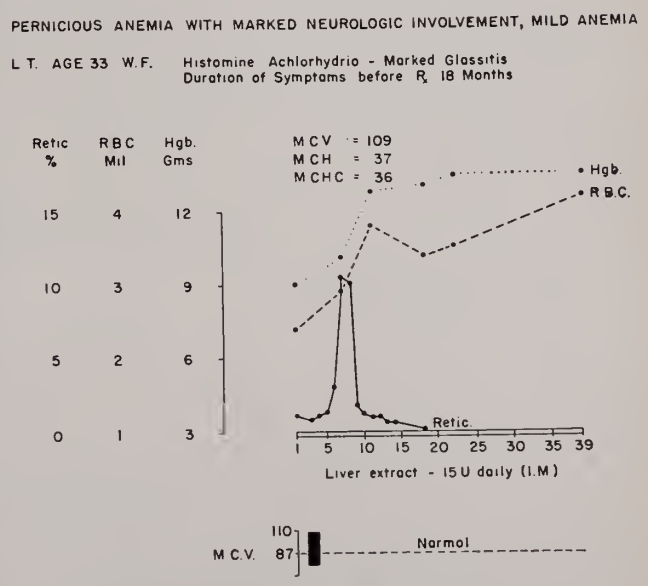
Introduction

The outlook for patients with an invariably fatal disease changed dramatically in 1926 when Minot and Murphy[1] published their paper on the treatment of pernicious anemia with a special diet. Since that time the contributions of many individuals have increased our knowledge of the disease and improved the methods of treatment at our disposal. The recent studies on "Folic Acid" and "Vitamin B_{12}" have stimulated renewed interest in this disease. Despite these advances there are individuals with pernicious anemia who suffer because diagnosis is delayed and treatment is inadequate. For this reason it was felt that a review of some of the problems of diagnosis and treatment of this disorder would be worthwhile.

Diagnosis

Recognition of the typical case of pernicious anemia is not difficult. In such cases the onset is gradual in middle age or later. Common symptoms are numbness and tingling of the extremities (nearly always most marked in the lower), weakness, poor appetite, weight loss, burning of the tongue, and ataxia. Often the diagnosis is suggested by the appearance of the patient because of the combination of gray hair and a smooth, sallow, or "lemon-yellow" skin. Physical examination usually reveals atrophy of the papillae of the tongue. Neurological examination may or may not reveal disturbance of the Romberg test, position sense of the toes, vibratory sensation, deep tendon reflexes or sensation to light touch or pin prick. If the disease is suspected, further laboratory investigation generally is sufficient to confirm the diagnosis. The combination of hyperchromic macrocytic anemia, achlorhydria after histamine, and low or normal leukocyte count is almost diagnostic. Study of the bone marrow in untreated cases reveals a megaloblastic type of erythropoiesis associated with abnormal, large, myelocytes, metamyelocytes, and macropolycytes. A positive indirect van den Bergh reaction and increased fecal urobilinogen are usually present.

In other instances the disease is not so easily recognized. In this category are the young patients with the disease; individuals with marked neurological involvement and little anemia; those with complicating factors such as blood loss which modify the type of anemia present; those in whom the picture has been confused by inadequate treatment. Recognition of the disease is often delayed in negroes, and this is often due to the failure to realize that the incidence of pernicious anemia in the negro is about the same as that in the white. At the University of Virginia Hospital the incidence of pernicious anemia is 92 per 100,000 white admissions, 66 per 100,000 colored admission.[2] Some difficulties in diagnosis are illustrated by the patients shown in Charts I and II.



The patient shown in Chart I will probably remain an invalid because of the delay in instituting treatment. This in turn was due to repeated failure to seriously consider the diagnosis of pernicious

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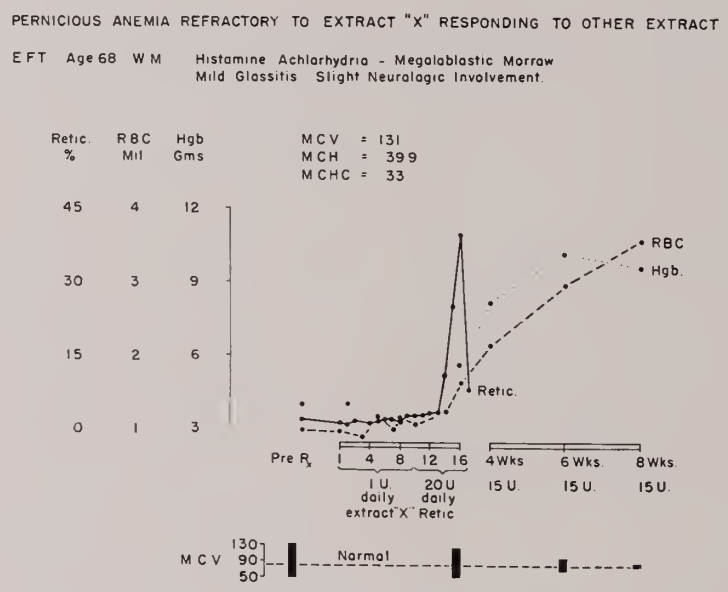
*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

anemia because of the age of the patient, the marked neurological disease in the presence of but slight anemia. It cannot be emphasized too strongly that there is little relationship between the severity of the anemia and the severity of the neurological involvement in this disease. Chart II illustrates a patient with severe anemia and no central nervous system involvement.

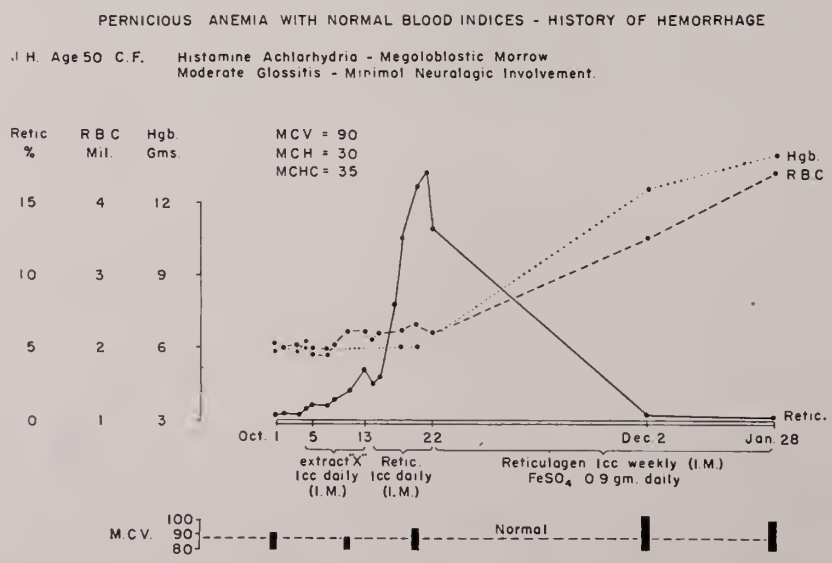
the megaloblastic bone marrow, achlohydria after histamine, and response to specific therapy leave no reasonable doubt about the diagnosis of pernicious anemia. Often pernicious anemia in negroes is not recognized promptly.

In an individual with pernicious anemia, as in any patient with anemia, it is of paramount importance to establish the diagnosis before beginning



The patient in Chart III illustrates the combined effect of insufficient erythrocyte maturation factor associated with chronic blood loss. The blood loss was recognized, treated with transfusion and corrected. Later anemia recurred. Note that the MCV and other indices are within normal limits. However,

treatment. The busy practitioner is tempted to compromise by prescribing a preparation containing both liver and iron, and probably vitamins, rather than meet the challenge of the diagnostic problem of the patient with anemia. Such treatment by recognition of a "sign" is not ideal. Physicians who



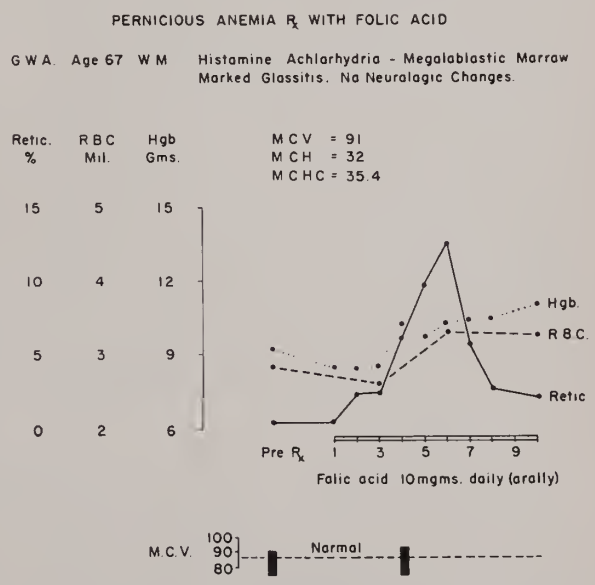
would not treat "fever", or "edema", do not hesitate to treat "anemia" without further diagnosis. If treatment is started with a mixed preparation, often the physician is faced with the problem of obtaining only partial remission in the symptoms and blood picture and still not have a diagnosis. In such a situation, examination of the blood smear, determination of the indices, and study of the bone marrow may not reveal the diagnosis. The dilemma is not escaped even if normal blood values are obtained under treatment. There still remains the question of whether to stop treatment that may be essential to the patient's health, or continue a treatment that may be unnecessary. At times treatment must be discontinued before diagnosis can be established.

TREATMENT

Preparations: Liver extract, folic acid (pteroylglutamic acid), and vitamin B_{12} are the most important preparations used in the treatment of pernicious anemia. All of these agents produce a change from a megaloblastic erythropoiesis to the normoblastic type in about 72 hours. There follows a rise in reticulocytes, hemoglobin, erythrocyte values, coincident with a fall in the plasma iron, serum bilirubin, and fecal urobilinogen. Later there is return of the erythrocytes to normal size and free erythrocyte protoporphyrin rises to normal values. The appetite improves, papillae of the tongue reappear, weight increases, and the patient usually returns to normal health. However, the ability to secrete hydrochloric acid and the so-called "intrinsic factor" do not return.

The unit of liver extract is that amount of antianemic material which, when given daily to a patient with pernicious anemia in relapse, has been shown, in the opinion of the Advisory Board, to have produced a satisfactory rise in reticulocytes, erythrocytes, and hemoglobin.[3] All liver extracts on the market labelled with a unit potency, are supposed to be tested for potency by the drug companies before they are marketed. Parenteral extract is more satisfactory than oral preparations because the physician is sure of the dosage and absorption. It also means a better follow-up and better contact with the patient. Whereas crude liver extract may be more effective than concentrated extract in some nutritional anemias, there is no evidence to indicate that this is true in pernicious anemia, even when severe central nervous system damage is present. Since they are at least as potent as the others, concentrated extracts are preferable in pernicious anemia because they cause less discomfort on injections and are less expensive to the patient, both in cost per unit and in frequency of visits to the physician. Microbiologic methods are used in assaying vitamin B_{12}. The validity of transposing these results into a unit for a human being with pernicious anemia remains to be established.

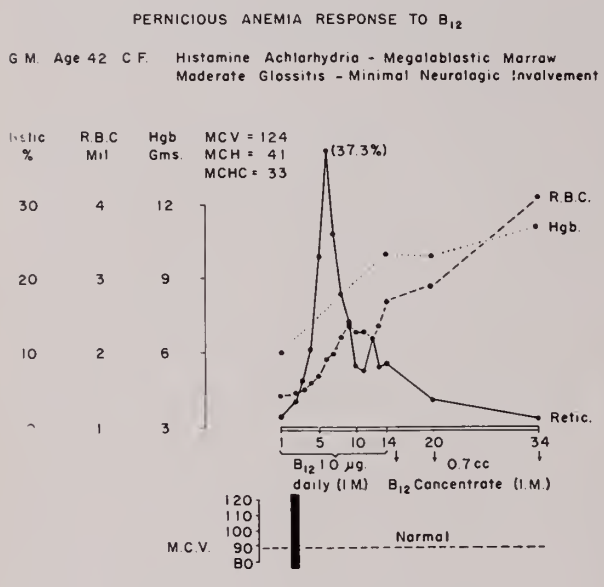
Folic acid is a member of the vitamin B group. It is effective in producing a hematological response in pernicious anemia and related macrocytic anemias when taken orally in small amounts. However, experience has shown that it does not afford protection for the neurological aspects of pernicions anemia and its use in pernicious anemia would appear to be restricted to patients who develop a hypersensitivity to liver extract and who have no sign of neurological disease. We have followed several patients of this type for several years. They were maintained on folic acid daily and ate liver several times a week. No neurological signs or symptoms have developed. In Chart IV is shown the hematological response



occurring in a patient with pernicious anemia treated with folic acid.

Vitamin B_{12} is the most potent preparation, weight for weight, that we have available in the treatment of pernicious anemia. Experience has shown it to be effective in producing hematological response in pernicious anemia. One microgram of B_{12} is approximately equivalent to one U.S.P. unit of liver

extract. It is given by injection because oral administration is less effective and unreliable. Whether it equals or surpasses liver extract in the treatment of the neurological aspect of this disease remains to be established. Preliminary observations suggest it



is quite effective. In Chart V is shown the effect of treatment of a patient with this preparation.

Method of Treatment: Of fundamental importance in the management in patients with pernicious anemias is the recognition of involvement of the central nervous system. Since the severity of the neurological involvement has little or no relationship to the severity of the anemia (Cases I and II), adequate treatment for one aspect of the disease may be inadequate for the other. The experience with folic acid and transfusions indicate that the blood may be restored to normal without satisfactory improvement in the neurological aspect of the disease. We believe that it is most important for the physician to decide whether or not neurological disease is present, since we feel that the treatment of the patient with neurological involvement is quite different from the patient without this complication. For this reason the treatment of the patient with pernicious anemia without neurological involvement and the patient with neurological complications will be discussed separately.

Treatment of the individual with pernicious anemia without involvement of the central nervous system is simple and is one of the most gratifying experiences in medicine. Various text-books usually recommend amounts of liver extract for this type of patient that are larger than necessary. Most patients respond well to one unit a day. However, it is our custom to err on the side of safety and give one cc. of concentrated liver extract (at least 15 units per cc.) intramuscularly three times during the first week, then the equivalent of one cc. every week or two thereafter until the erythrocytes return to normal in number and cell volume. After the blood is restored to normal the dose is regulated according to whatever is necessary to maintain the blood in a normal range. This varies greatly and must be determined for each individual. Some patients require 30 units every three weeks, others every four weeks, some only once every six weeks. If folic acid is used, 5 mg. per day by mouth is adequate for most patients. The dose of vitamin B_{12} is not yet established, but it appears that one microgram is equivalent to one unit of liver extract.

If the central nervous system involvement is present, the disease is much more serious. It is generally agreed that the longer the evidence of central nervous system involvement has existed, the poorer the chances are for complete recovery. The severity increases from peripheral neuritis, to dorsal columns, to classical subacute combined degeneration, and finally to subacute combined degeneration with loss of control of the vesical and rectal sphincter. It is accepted that the more extensive the involvement, the poorer the prognosis. Neurological involvement rarely develops or increases if the blood is kept normal. However, it does not follow that, if central nervous system involvement exists, treatment sufficient to restore the blood to normal is necessarily adequate treatment for the neurological lesions. Most authors state that patients with central nervous system disease require a larger dose of the drug than those without neurological disease, but their recommendation for the actual dosage is vague. Of course, this is the case because the exact figures are not known and the neurological response can not be measured as simply as that of the blood. It has been our practice to give 100 units a week for the first month of treatment, then 50 units per week for the next six months. Improvement in the neurological manifestations may not occur until after six months of therapy but improvement is usually evident sooner. Maximal improvement usually occurs within one or two years. Patients who have been properly diag-

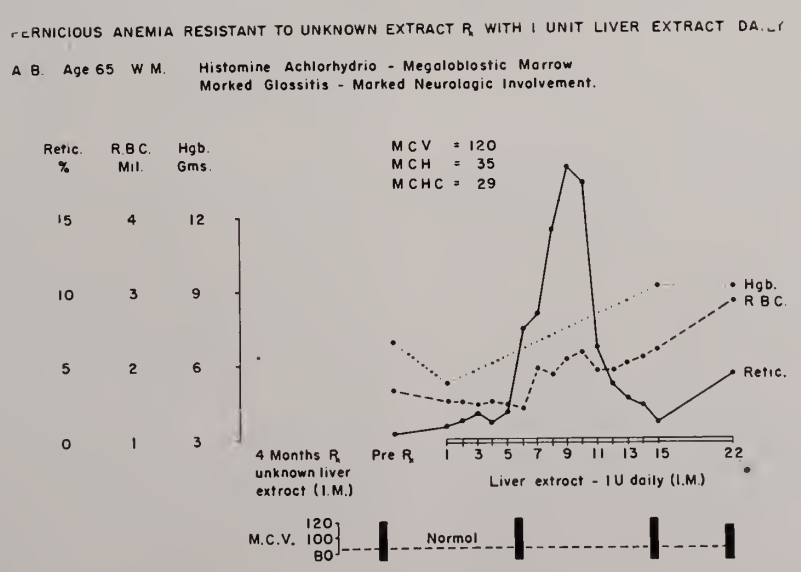
nosed, then inadequately treated over a period of years, may improve in a surprising manner when the treatment dosage is increased. For this reason we feel that a thorough trial with the large dosage schedule is indicated in every patient with neurological involvement no matter how extensive the involvement or how long the treatment has been inadequate. There appears to be no place for folic acid in treatment of the patient with pernicious anemia and neurological involvement. In several patients with moderately severe neurological involvement that we have treated with vitamin B_{12} it has appeared that improvement was quicker and greater than one usually sees in liver extract. Thus, even though the relative value of vitamin B_{12}, and liver extract remains to be determined, it would seem logical to try the other if one has not given the desired effects.

In the patient with severe neurological disease, bed rest and physiotherapy are important. A recent report by Hall *et al.*[4] emphasizes this often neglected aspect of treatment. Special attention to bladder drainage and infection of the gentio-urinary tract are often necessary. In selected cases of multiple deficiency, added vitamins or iron may be indicated, but these constitute a very small fraction of the patients with pernicious anemia.

Causes of Failure in Treatment: Inadequate treatment is probably the commonest cause of relapse. It is distressing to see a person who was properly diagnosed and adequately treated at one time, later develop a hematological relapse or neurological progression because of a lapse in treatment. Yet this is a frequent occurrence. Sometimes it occurs as a result of human frailty on the part of the patient, or lack of faith in what the physician tells him. At other times it may be due to difficulties in transportation. At other times the physician must take the blame. It is his duty to make the patient really understand that treatment must continue the remainder of the patient's life. The consequences of failure in this regard should be pointed out to the patient. It is also the physician's duty to examine the patient's neurological system and his blood often enough to be sure that he is giving adequate treatment.

Conditions that impair blood formation may interfere with proper response to treatment. Coincidental infection, especially the GU tract, may be responsible. Vascular disease and impaired renal function may prevent proper response to treatment. For several years we have followed a patient with chronic pyelonephritis and hypertension whose blood urea is generally in the neighborhood of 80 mg. per cent. We have not been able to get the erythrocyte count over 3.2 million in this patient despite massive amounts of all the anti-anemia preparations.

Marked neurological involvement is usually listed as a cause of failure to obtain satisfactory hematological response to therapy. Perhaps this is true, but our experience has led us to think that more often other associated factors such as vascular disease and infection are responsible. Certainly we have observed patients who were invalids because of advanced neurological lesions and yet were maintained



with entirely normal blood values as long as the urinary tract was kept free of infection.

At times the development of carcinoma of the stomach may be first manifested by change in status of the blood. This rare complication is reported to be three times as frequent in patients with pernicious anemia as in a general population.[5]

A surprising cause of relapse is the presence on the market of liver extracts that are inert as far as the antipernicious-anemia factor is concerned. During the past year we have observed two such cases at the University of Virginia Hospital. In each instance the physician was apparently giving large doses of liver as judged by the listed unit value of the preparation. Each of these patients had a bone marrow that appeared megaloblastic and untreated, and each patient had a maximal response to one unit a day of a potent extract. An example of this type is presented in Chart VI. It seems likely that these extracts were never standardized before being marketed. This happening can be prevented by using only preparations made by well known reputable pharmaceutical houses.

The only reliable method of testing liver extracts is by trial on patients with pernicious anemia in relapse. We agree with Wintrobe[6] that it is the necessary duty of suitable patients with pernicious anemia to allow themselves to be used for testing for a reasonable time. The pharmaceutical houses pay hospitalization costs of suitable patients for this purpose in cooperating hospitals. To be suitable a patient should have a red blood count of less than 3.0 million, preferably less than 2.5 million, no neurological disease, and should not have received specific treatment or arsenic within a month.

Summary and Conclusions

1. Examples of the difficulty in diagnosis in certain patients with pernicious anemia are presented.
2. Satisfactory treatment schedules are outlined and the causes of failure are discussed.

Case Reports

Mrs. L. T., Case I.—History: This 33 year old housewife was first admitted to the Medical Service of the University of Virginia Hospital in March, 1948, with paraplegia of the lower extremities and neurological signs of severe combined systems disease. She had noted symptoms of numbness and tingling of her feet 18 months prior to hospital admission and an inability to walk because of weakness and loss of control of her legs 12 months prior to hospitalization; at that time her red count was 3.5 millions and hemoglobin 12.5 grams. Erroneous diagnoses of cord tumor and multiple sclerosis were previously made.

Physical examination: Marked glossitis and neurological signs of severe combined systems disease including a paraplegia and urinary incontinence.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count 2.4 millions with 9.5 grams of hemoglobin; blood indices revealed a hyperchromic marocytic anemia.

Course: The patient was treated with intense liver therapy consisting of 15 units of concentrated liver extract daily for 39 hospital days and physiotherapy. A reticulocyte response of 11% was obtained and there was improvement; she regained bladder control, and she was able to move her toes and feet. On discharge her red blood count was 4.2 millions and hemoglobin 13.5 grams. She was advised to continue treatment at home consisting of 45 units of concentrated liver extract weekly and physiotherapy.

Comment: This is a case of pernicious anemia occurring in a young individual with mild anemia and marked neurological complications illustrating the lack of correlation between the severity of the anemia and degree of neurological involvement.

Mr. E. T., Case II.—History: This 68 year old white male was admitted to the University of Virginia Hospital on November 29, 1947, with the complaints of marked weakness and dyspnea of one year's duration. He had also noted ankle edema, anorexia, weight loss, and "yellow skin". He gave no symptoms of glossitis or paresthesias of the hands and feet.

Physical examination: Grey hair, yellow skin, atrophic tongue, and normal neurologic findings.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count of 0.99 millions and hemoglobin of 4.0 grams, and blood indices revealed a hyperchromic macrocytic anemia.

Course: The patient was treated with an "unknown" liver extract for ten days with no significant response; he was then given 1 cc. of "Reticulogen" daily and on the 5th day of this therapy a reticulocyte response of 39% was obtained. The patient was discharged symptomatically improved.

On February 5, 1948, five weeks after discharge, the patient had 3.5 million red blood cells and hemoglobin of 9.5 grams.

Comment: This is a case of pernicious anemia with severe anemia showing no neurological involvement.

J. H., Case III.—History: This 50 year old negro woman was admitted to the University of Virginia Hospital on September 28, 1948, with the complaints of weakness, anorexia, weight loss of two years duration. Fourteen years prior to admission she had a massive hemorrhage from a ruptured ectopic pregnancy and required transfusions at that time. For the year prior to admission she had noted numbness and tingling in her hands and feet. Three months prior to admission she was told by her physician that she was anemic and was given two blood transfusions.

Physical examination: Mild glossitis and no abnormal neurological findings.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count of 1.94 millions with 5.8 grams of hemoglobin, and normal blood indices.

Course: A diagnosis of pernicious anemia was made and the patient was given 1 cc. of "Unknown" liver extract daily for ten days with less than the expected reticulocyte response being obtained; she was then given 1 cc. of "Reticulogen" daily for eight days with a reticulocyte response of 17%. The patient was discharged from the hospital on October 21, 1948, and was continued on 1 cc. of "Reticulogen" weekly at home. She returned to the Hematology Clinic on November 2, 1948, and January 28, 1949; on the latter date her red blood count was 4.42 million with 14 grams of hemoglobin.

Comment: This illustrates the occurrence in a negro of pernicious anemia associated with normal blood indices. She gave a history of blood loss in the past and was treated with blood transfusions before a diagnosis of pernicious anemia was made.

Mr. A. B., Case VI.—History: This 65 year old white male was admitted to the University of Virginia Hospital on February 9, 1948, with a history of marked anemia and symptoms of severe combined systems disease occurring ten years prior to admission. At the same time he had marked ankle edema. He received daily liver injections at that time with marked improvement of his anemia and general condition. He was maintained on frequent injections of liver extracts until four months prior to admission. At that time he developed severe anemia, weakness, and marked dependent edema. He was given large doses of parenteral liver for four months without improvement of his anemia, symptoms, or edema. He was then referred to the hospital for diagnosis.

Physical examination: Marked glossitis, marked neurological signs of combined systems disease, and marked edema of the lower extremities.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count of 1.6 millions with a hemoglobin of 8 grams; blood indices revealed a macrocytic anemia. Total serum proteins were 3.6 mgm. per cent.

Course: The patient received daily injections of 1 unit of a concentrated liver extract and on the 9th day of therapy a reticulocyte response of 18.4% was obtained. On discharge from the hospital on March 25, 1948, the red blood count had risen to 3.2 millions and the hemoglobin to 9.7 grams. The patient's hypoproteinemia was treated by diet and protein hydrolysate supplements and the total serum proteins on discharge were 5.8 mgm. per cent. The patient was symptomatically improved and there was marked neurological improvement.

Comment: This patient with pernicious anemia received large amounts of a commercial liver extract for four months, that was evidently inert, without benefit. He then responded in typical fashion to 1 unit of a potent liver extract when given daily by injection.

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DISCUSSION

DR. JOHN B. MCKEE, Winchester: In his usual competent and concise manner, Dr. Leavell has discussed the important factors to be considered in the management of pernicious anemia. One of these is the importance of accurate diagnosis before therapy is started. We have brought to our attention by literature and detail men countless preparations containing vitamins, liver, iron, folic acid, etc., coming at a high price and touted as the cure-all for anemia, without reference to the underlying nature of the anemia. As Dr. Leavell has pointed out, the prescribing of such preparations prior to accurate diagnosis is very dangerous. In the case of secondary anemias, it may lead one to overlook the hidden disease process, such as a malignancy. In case of pernicious anemia, it is likely to so mask the normal progression of the disease as to lead to the development of a considerable degree of neurological damage.

The other point which I would like to emphasize is the accurate evaluation of macrocytic anemias. It is important both from the standpoint of therapy and prognosis that the diagnosis not be made on the basis of the blood smear alone. Macrocytic anemias in the elderly are quite likely to be due to aplastic anemia or to gastric malignancy; liver disease is also a cause of such anemias. The failure to make a proper diagnosis in such cases and to give a favorable prognosis when the outcome is likely to be fatal can prove to be most embarrassing.

DR. GEORGE B. CRADDOCK, Lynchburg: I have been told that carcinoma of the stomach develops in greater frequency in patients with pernicious anemia than it does in patients without pernicious anemia, and I should like to ask Dr. Leavell how often he checks the stomach in pernicious anemia patients with X-ray or other means for that.

DR. LEAVELL, closing the discussion: I want to thank Dr. McKee for his discussion.

As to Dr. Craddock's question, that is one thing we left out because of lack of time. Studies indicate that carcinoma of the stomach occurs about three times as frequently in pernicious-anemia patients as in other persons. When a patient is under treatment and has responded well but begins to look badly the possibility of carcinoma of the stomach should be suspected and it should be looked for. Probably X-ray of the stomach should be done every six months.

Of course, people with carcinoma of the stomach may develop macrocytic anemia, but they do not have the typical findings of pernicious anemia.

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Tarnier (Stéphane or Étienne) is best remembered as the inventor of a very successful axis traction forceps. He was the first to use a milk diet as prophylaxis in preeclampsia, also the first to use Listerism in obstetrics. The Encyclopedia Britannica shows a picture of an incubator designed by him.

Tarnier was born at Ayserey (Côte-d'Or) April 26, 1828 and died in Paris, November 24, 1897. He began his medical studies in Dijon, but completed them in Paris where he taught and did most of his work.

THE DIAGNOSIS AND TREATMENT OF TRICHOMONAS VAGINALIS

Robert Thrift Ferguson, M.D., F.A.C.S.,
and
Glenn S. Edgerton, M.D., F.A.C.S.,
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About ten years ago I became interested in the treatment of Trichomonas vaginalis because I had seen so many patients with a foul vaginal discharge that were apparently incurable with any method known at that time. I found that in practically all of these patients the microscope showed a multitude of Trichomonas in the vaginal discharge. I have kept a complete record and follow-up on all my patients, and, since I have seen more that 600, I have decided to put into print what I have learned for the benefit of my fellow practitioners, as well as for the patients who have been so unfortunate as to develop this disease.

The etiology of Trichomonas is still a mystery, and, although I have spent many years working with it, I am still as far from the knowledge of its origin and mode of transmission as ever. Many of the patients in this series lived in homes with several other women who used the same toilet and bath facilities and none of the others were infected. The discharge of many husbands has been examined and I have found only one who showed the disease. I have also examined the rectal discharge from many of these women and have yet to find a single Trichomonad.

The symptoms are so definite that they cannot be mistaken. Practically every patient with the disease has the following five, which I would call the cardinal symptoms: leukorrhea, itching, burning, irritation and odor. When a patient appears with this set of symptoms your diagnosis is almost certain, but with this condition you cannot afford to do any guess work, especially when the diagnosis is so simple; therefore, every one must have a specimen put under the microscope to confirm the diagnosis. The morphology of the Trichomonas is unique. There are many shapes and forms which vary from a perfectly round cell to quadrangular, ovoid, carrot-shaped or irregular. Many contain flagellae and many do not, so you must be very familiar with the various shapes to enable you to make a diagnosis. The movement is characteristic, when present, but often there is no movement at all.

It is only necessary to place a drop of the vaginal discharge on a slide mixed with a drop of normal saline solution to make the diagnosis.

The question is frequently asked: "Is this a venereal disease"? My answer is definitely not.

Unless one is willing to give hours upon hours in the diagnosis and treatment of this condition, then he should refer the patient to some one who will. The treatment cannot be carried out without a microscope. It is impossible always to find the parasite at the first examination and it will be necessary to make repeated examinations without the patient having had any vaginal treatment in the meantime. A simple douche with salt or vinegar will frequently prevent finding the parasites. It is absolutely necessary to know that they are present before the treatment is begun; else you will never know whether the patient actually had the infection and will not know when she is cured. I have discovered that practically all vaginal discharges will be cured with this treatment.

The length of time necessary to treat any patient will be determined by that individual. The longest time it has taken me to cure one was five years and she reported to the office one year later and had remained well. A specimen of the discharge must be placed under the microscope at every treatment to determine the progress and know when the patient is free. Long experience has proved that it will be necessary to give a treatment every day at first, then every other day, then twice a week, and later once a week until the patient has passed two menstrual periods free; and now we have them return after each period for the next two months to make sure that there has been no recurrence. A patient may remain free for the entire month and when the period returns the parasites show up again. Treating patients during the menstrual periods is rarely necessary and it is of little value because the drug is washed away with the menstrual flow. If they do not have a return in six months I consider them cured. Nothing under this can be considered, for occasionally a patient has remained free for three months and then had a relapse. When the disease recurs after six months I class it as a reinfection,

and I have had a few to do this. I have noticed when a reinfection does occur, they are quickly cured and I rarely find a parasite after the first treatment, although the treatment must be carried out as formerly until the patient has passed two menstrual periods free. I have had only one with a second reinfection and she was quickly cured.

Douches will give temporary relief only and my patients are instructed not to take another while under treatment, and they will not need one. I recall hearing Dr. Will Mayo say at one of his clinics thirty-five years ago that douches never cured a woman of leukorrhea. I have had many patients tell me that they had been taking douches three times a day for a year under instruction from their physician and without relief: Think of what a burden this must be to a woman!

The odor of this disease is almost symptomatic and is so distressing that it makes a patient ashamed to go out in society. The treatment I have used relieves 95% of the patients of all symptoms immediately, and if they will return as directed they will remain free. The intensity of the symptoms will vary with the patient; in some they are mild, and in three of this series all symptoms were absent and the parasites were found on routine examination. This makes it much more imperative to examine the discharge from every woman.

The itching is terrific with some, and present with practically all. The irritation is sometimes almost incapacitating and the patient can walk with difficulty, and the inflamed areas sometimes extend down six to eight inches on the thighs. This is generally relieved with the first treatment.

Trichomonas occurs most frequently in the vagina, next in the urethra, and finally in the bladder. So far as I have been able to determine, it is a local disease and the parasites do not pass beyond the internal os.

All of the bladder cases I have seen have been cured with either one or two treatments. Those occurring in the urethra are slow to improve, and in the vagina the time is very indefinite. All patients obtain such relief that most of them will return if it is at all possible. A few are entirely relieved after a few treatments and fail to return. A half dozen of this series never had a parasite after the first treatment, and this is the goal for which I have been striving.

I have found that in almost every instance when one of these patients has been cured and has a return of any one of the symptoms, they are back for a recheck immediately.

The drugs that have been used in the treatment of this condition are multitudinous but I have failed to find a cure with any of them. I will mention a few of those I tried in the early stages without any permanent results: douches with salt, soda, vinegar, boric acid, trichotine, stomaseptine, potassium permanganate, soap, lysol, bichloride of mercury, argyrol preparations, etc. Failing with any of these I tried painting the vagina with iodine, ether, alcohol, silver nitrate, argyrol, bismuth violet, silver picrate blown into the vagina, and various other silver preparations without relief. Devegan and floraquin tablets placed in the posterior vaginal vault are the best of this type but have not been curative in my hands. I also tried sulfa drugs and penicillin in the vagina but on repeated examinations of the vaginal discharge following this the parasites were still alive.

The accepted treatments for gonorrhea and syphilis have no effect on the parasites. I could always find them present and alive in great numbers while the vagina was filled with silver picrate. This demonstrates the value of the microscope. With this array of drugs there is no wonder that the average physician becomes disgusted and dismisses the patient with a douche.

In studying this condition in the hospitals of Chicago and New York I was surprised to find that they saw several thousand cases a year with this disease who were given treatment with one of the above and told to return if they did not get relief, but none of them had done any follow-up work and had no way of determining the result.

Prior to my study of this disease I saw many patients with foul smelling discharges, itching, burning, irritation and odor who I was unable to cure and that caused me to undertake the present study. Since the discovery of the present treatment my patients have not only continued to come but have sent their friends suffering with like symptoms. I have found that the best method to keep the patients coming for treatment is to show them the parasites under the microscope and they will exclaim "Do I have those things running around in me"?

Now for the treatment: I first begun to use mercurochrome in a 2% solution with very limited

results; then I had a patient with the parasites in the bladder and found that she was cured with one injection of mercurochrome (1%) in the bladder. This gave me an idea that maybe a stronger solution might be valuable in the vagina, so I stepped the strength up to 5%, then 10%, 15%, 20%, 25%, 40%, 50%, 75%, and finally to 100% dissolved in water. Later I discovered that a 75% solution was equally as effective, and also due to the fact that the drug is quite expensive, I have continued to use the 75% strength with admirable results.

Up to one year ago I had made a diagnosis of Trichomonas in 600 women and have kept a complete record on each with the following results: 228 of this number had one or more treatments after the diagnosis and failed to return. Some of them had a few treatments and thought they were cured and did not return. The majority of these 228 had only the diagnosis and treatment at the time and did not return. Many lived a long way from Charlotte, and some in other states, and did not find it convenient to return. It was surprising how many of them lived as much as 100 miles or more from the office and came regularly twice a week, or oftener at first, and continued the treatment till they were cured, and they have been followed from one to ten years and have remained well. This leaves 372 who continued the treatment till they were cured.

The total number of treatments for the 600 patients was 11,983 and the average number was 32.6. The total number of months of treatment was 6,240, and the average number per patient was 17. So you can readily see that I have put a good many hours into this work. Many of these were cured in three months, and with comparatively few treatments, while others took many months.

The number of reinfections was 29, or 7.9%. Six patients became pregnant soon after the treatment was begun and a number were treated while they were pregnant. Only two of the patients had active gonorrhea, but many gave a history of having had the disease. One had syphilis. I do not recall a single patient who had a history of gonorrhea who did not have Trichomonas. I used to think that filth, and especially gonorrhea, was always the cause, but I found that some of the nicest and cleanest women were infected. A number of these patients were virgins and this would ordinarily preclude any gonorrheal infection. Five of the patients were still being treated when this paper was begun so they are not included in the final result.

The detailed treatment consists in placing the patient on the table in the dorsal position, speculum inserted, and a drop of the vaginal discharge placed on a slide with a drop of normal saline solution and placed under the microscope, when the Trichomonads are easily recognized. The vagina is carefully swabbed with absorbent cotton to render it as dry as possible and painted with 75% solution of mercurochrome. The solution is also put in the cervix, being very careful that it does not pass the internal os, or it will set up uterine spasm. If the infection has spread to the urethra this is carefully treated with a fine probe wrapped with cotton and inserted the entire length of the urethra. If the vulval walls and tissues of the thighs and pubis are irritated they are also painted. The first treatment causes severe burning which lasts for from five to ten minutes and then subsides. The Trichomonads irritate and appear to dissolve the mucous membranes, leaving them red and raw, but healing takes place rapidly following treatment and there is very little discomfort after the first treatment.

The Trichomonads will live indefinitely in normal saline solution at proper temperature and I have frequently placed them in a bottle in the morning and taken them to the hospital in the evening for demonstration to a class of nurses.

I have noticed a very striking incidence of relief from backache in a number of these patients. They told me that they had daily backache for months and after the first few treatments were entirely relieved and permanently so.

In closing, I wish to call your attention to the oxytocic action of concentrated solutions of mercurochrome, which is very powerful, and, when put in the uterus, sets up violent contractions. This should be borne in mind when treating pregnant women or an abortion will almost certainly follow.

I want to take this opportunity to thank the many physicians who have referred patients to me for treatment. I also wish to thank my associate Dr. Glenn S. Edgerton for his assistance in treating many of the later cases in this series while I was incapacitated.

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HYPERPARATHYROIDISM

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DEFINITION: Hyperparathyroidism, or osteitis fibrosa cystica, may be defined as an endocrine disease, affecting the parathyroid glands and characterized primarily by an increase in the serum calcium, an increased excretion of calcium in the urine, and by decalcification of the skeletal system.

HISTORY: Von Recklinghausen in 1891 first described the skeletal manifestations of the disease and differentiated osteitis fibrosa cystica from osteomalacia and osteoclastic metastasis of bone. In 1904 Askanazy first commented on the presence of a tumor of the parathyroid gland in a case of osteitis fibrosa cystica. In 1907 Erdheim noted that the parathyroid glands were hyperplastic in bone diseases with skeletal decalcification and believed that the liberation of calcium and phosphorus caused hypertrophy and hyperplasia of the glands. In trying to prove Erdheim's belief, Mandl in 1925 transplanted parathyroid glands into the abdominal wall of a man suffering from osteitis fibrosa cystica. The disease process appeared to have been made worse, so he explored the patient's neck and found a parathyroid adenoma which, upon removal, cured the patient of his disease. Since that time numerous cases of hyperparathyroidism have been discovered and treated by surgical removal of the causative glands. As knowledge of the parathyroid glands has increased, the index of suspicion has risen and dysfunction of this gland has been found more often, especially borderline and less far advanced cases. However, hyperparathyroidism is by no means a *common* disease and one might practice medicine for many years without seeing a single clear-cut case.

SYMPTOMS AND SIGNS: The symptoms and signs of hyperparathyroidism have usually existed for years before some physician finally notices one outstanding development which directs his attention to the possibility of the presence of a metabolic disease of the parathyroid glands. Thereupon, closer probing into the past history and rescrutinizing past treatments and experiences with the patient, brings to light a series of developments, about which the patient had liberally complained but which his physician had not fitted correctly into their places as parts of the jig-saw puzzle going to make up parathyroid disease.

After analyzing a few of the cases that have been reported since 1940, certain facts were noted which were of interest and enlightening because these things were of a nature that the average physician does not usually associate with hyperparathyroidism. Also, although the patient's complaints were loud, many of them being objective as well as subjective, they were either ignored or else attributed to that catch-basket of psychosomatic disorders. Neurasthenia, malnutrition, vague rheumatic pains, senile changes, mild chronic nephritis all too easily may account for most of the patient's difficulties as he first presents himself. Having been guilty of this very thing myself, I therewith resolved to hereafter pay more attention and give more thought to my patient's woes whether I believe them to be organic in origin or not.

A study of cases shows that the presenting complaint and most prominent symptom of all was *pain in the bones and joints.* In some cases it is so severe as to require narcotics for relief, but most complain of a moderate aching pain through the back, hips and pelvis, particularly pain on weight bearing. The average case has complained of pain for from 2 to 3 years before the correct diagnosis was made.

The second most prominent symptom was muscular weakness and easy fatigue to such a degree as to interfere with their everyday work which previously had been carried out with no undue difficulty. This may at times be so marked as to cause the patient to become a semi-invalid. The average duration of this complaint was from 5 to 6 years.

The third most prominent complaint was the occurrence of a fractured bone by force which though not necessarily slight was usually not severe. The important thing about the fracture is that usually these patients have a history of repeated fractures incurred with questionable amounts of force. Also, we may note bone cysts which form commonly can easily be mistaken for metastatic carcinoma or other decalcifying or cyst-forming processes. Fractures may occur at the sites of these cysts especially if they should be located in the lower extremities where

weight bearing is a factor.

The fourth most prominent symptom or group of symptoms were those related to the genito-urinary organs and were the results of the deposition of calcium phosphate in the genito-urinary tract. In 1934 Fuller Albright classified the renal pathology of hyperparathyroid disease under three main headings:

1. *Pyelonephritis* secondary to the formation of calcium phosphate stones in the kidney pelves. This appears to be the most commonly encountered and commonly over-looked genito-urinary disturbance in this disorder. The symptoms associated with the process are identical with those of any calculus located in this organ. It should be emphasized that particular attention should be given when there is a history of having had repeated episodes with renal calculi.

2. *Nephrocalcinosis,* in which the deposits are located in the kidney parenchyma instead of the pelvis. Here a condition that may resemble chronic nephritis may occur. Inflammatory changes about the deposits take place, followed by sclerosis and contracted kidneys.

3. *Acute severe parathyroid poisoning* with calcium deposits in the kidney as well as other organs and terminal anuria. This appears to be about the same process as given above except that it occurs rapidly and there is no time for sclerosis and contraction to take place.

The fifth most prominent symptom and occasionally the one that directs attention toward the correct diagnosis is polyuria and polydipsia. The taking of water and the volume of urine may not be so great as to in itself lead one to believe that renal or parathyroid disease exists. Rather there is usually a moderate polyuria and polydipsia which may amount to 2,000 or 3,000 c.c. of urine and the consumption of 3,000 to 4,000 c.c. of liquid. Superficially this may not seem to be and is not any great quantity but it is sufficient to cause most victims of this disease, when inquired into, to voice the opinion that they drink a great deal of water and pass a great deal of urine—much more than most people they are quite sure. Occasionally polyuria and polydipsia will be one of the chief complaints. It was found this had been noticed by the patient for an average of seven to eight years before the correct diagnosis was made.

To recapitulate: Five of the most outstanding factors to be looked for in the history of a case of hyperparathyroidism are:

1. Pain in bones and joints
2. Muscular weakness
3. Repeated fractures of bones
4. Genito-urinary calculi
5. Polyuria and polydipsia.

There are many other signs and symptoms which occur but they are not quite so directive and, indeed, often serve to obscure the true diagnosis and lead us to do many procedures which show nothing conclusive and usually serve only to falsely ensure us in our wrong impression which is often psychosomatic disease or one of those given previously. Many patients have anorexia, nausea, attacks of gas, belching, constipation, bouts of vomiting. Cardiac irregularities and conduction defects occur occasionally. Epulis, which is a small connective tissue tumor occurring on the gums, is seen occasionally. Patients sometimes give a history of having had one removed sometime before the true disease is recognized.

Diagnosis: The diagnosis of hyperparathyroidism is based primarily upon the chemical examination of the blood. It is not difficult to arrive at a correct diagnosis in a patient who has polyuria, polydipsia, pains in his bones, weakness; who has had bone fractures and whose roentgenograms show typical osteitis fibrosa cystica, and whose blood shows hypercalcemia. Such a classical case is not the rule, however, and, when seen, represents a far advanced one in which the true diagnosis has usually been missed by more than one physician. It *is* true that the roentgenologist is often the first to suggest the diagnosis of hyperparathyroidism when it had been unsuspected clinically. This is unfortunate, for bone changes appear to be dependent largely upon the duration of the disease and not upon the degree of hyperparathyroidism. Dietary habits also influence the degree of bone changes and those who consume large quantities of milk or calcium containing foods do not so often show marked decalcification. Never the less, roentgenological evidence of bone changes and abnormal calcium phosphate deposits are very important factors in arriving at a diagnosis. Mild or less far advanced cases who fail to show roentgenological evidence of the disease are very difficult problems and, without the confirmatory proof of accurate laboratory studies of the blood, the true diagnosis cannot be reached with any degree of certainty. There are four important examinations

to be made upon the blood. These are:

Serum total calcium—normally 9 to 11 mg. %.

Serum inorganic phosphorus—normally 2.5 to 4.5 mg. %.

Serum phosphatase—normally 2-5 Bodansky units %.

Serum total proteins—normally 7 gm. %.

To go into great detail about all possible variations of the biochemical findings would take too much time and space and would require considerable more knowledge than I possess. However, there are a few important items which will be mentioned. In the majority of cases, 90 to 95%, serum calcium will be over 11 mg. per 100 cc. Serum phosphorus will be less than 2.5 mg. % in approximately ½ the cases. In patients in whom renal insufficiency has become marked, phosphorus may be retained and the serum content be normal or even high, with a correspondingly low serum calcium.

The amount of phosphatase present and given in units is considered to indicate the degree of activity of the mechanism of bone repair. There are many conditions besides hyperparathyroidism in which serum phosphatase may be elevated, or, more properly, its activity increased, for phosphatase is an enzyme. Among them are Paget's disease, rickets, osteomalacia, extensive fractures, some cases of wide spread skeletal metastasis from carcinoma. Phosphatase activity determination is important because, if it is high preoperatively, the likelihood of postoperative tetany is great and early symptoms of tetany should be looked for and treated as they arise.

Calcium excretion in the urine is an additional test which may be done when the results of the serum examinations are inconclusive. The total quantity of calcium excreted in the urine of a normal person when on a low calcium diet is 100 mg. or less. On a similar diet a person with hyperparathyroidism will excrete from 150 to 400 or 500 mg. of calcium. Again, renal insufficiency may reduce this to a fraction of that expected.

A simple and inexpensive test for determining the approximate amount of calcium excreted in the urine is the Sulkowitch test* (*Med. Clinics of North Am.*, July, 1940, Page 1030) which is done by simply adding an equal amount of Sulkowitch's reagent and urine together in a test tube. A milky color means an excessive excretion of calcium and possibly a high blood calcium. A fine white cloud indicates approximately normal serum range. No precipitate means no calcium is being excreted and the serum level is probably below 7.5 mg. %. To be of value this test should be done while the patient is taking a moderately low calcium diet. It may be done on the 24 hr. total specimen or it may be done on the morning specimen, collected before breakfast, and following a supper without high calcium content foods such as milk or milk products.

Serum protein determination is quite important, especially in border-line cases where the calcium report is not particularly high. It has been shown that lowering of serum proteins will lower the total calcium approximately .75 mg. for each gram of protein (McLeon and Hastings; *Am. J. Med. Sci.*, 189:601, 1935). Thus it is seen that in a case with a serum calcium of 11.5 and a total protein of 6, the calculated true serum calcium would then be 11.5 plus .75 or 12.25 mg. per cent, a difference which might be significant.

TREATMENT: Once the diagnosis has been established, surgery offers the patient his only chance of cure. At operation usually a single tumor may be found and removed. The most careful and meticulous dissection is necessary in order to find and identify normal parathyroid tissue and to find and distinguish abnormal glands. It has been possible to divide cases into two groups (Castleman and Mallory; *Am. J. Path.*, 11:1, 1935) according to the histological changes in the glands. One of them is characterized by a diffuse uniform hyperplastic process throughout all the parathyroid glands, and is called primary hyperplasia. It is usually due to the Wasserhelle cells. The second, an adenoma, usually involves only one parathyroid gland and is composed of chief cells. Thus in the first type, unless nearly all of the parathyroid tissue is removed, the disease will not be cured. In the second type, usually only one tumorous gland has to be removed.

The prognosis of those cases discovered before renal insufficiency has developed and properly treated by surgery is excellent. However, once renal damage has occurred it is permanent. The continuation and advance of the process of calcification may be arrested by surgery and the prognosis then depends upon the amount of renal or other damage already

*Sulkowitch Reagent: "Two and five-tenths gm. of oxalic acid, 2.5 gm. of ammonium oxalate and 5 c.c. of glacial acetic acid are dissolved in distilled water and made up to a volume of 150 c.c."

done, but there is no resorption of calcium already deposited in the tissues and organs.

The first few days following operation are the most dangerous. This is the period during which tetany is most likely to develop. Also, these patients are prone to develop oliguria and uremia. Parenteral fluid should be given—1,000 cc. of glucose in distilled water every eight hours. Calcium should be given intravenously at the earliest sign of increasing muscle irritability. Calcium chloride is the most effective form of calcium and, if given with great care, diluted in an infusion, is probably the best form to use. From 10 to 30 cc. of 10% solution may be given depending upon the severity and acuteness of tetany. Calcium gluconate will accomplish the same result without the dangers of causing tissue necrosis but twice as much of it has to be used. In most cases it is possible to give calcium orally, and then large doses must be given. Two to 5 gm. every 20 to 30 min., dissolved in hot water, should be given when the immediate danger of tetany is at hand. Unless the calcium (lactate is best) is dissolved, very little of it will be absorbed. Once the acute stage of tetany has passed, maintenance doses are begun and vary from 2 gm. up to 10 gm. four or five times daily. Each case must be worked out by observation, trial and error. The use of the Sulkowitch test now becomes extremely important and affords an easy method to keep tab upon the relative serum calcium level. In conjunction with oral calcium, dilute hydrochloric acid and moderate doses of vitamin D_2 help to bring about absorption of calcium from the gastrointestional tract. The very large doses of vitamin D_2 once advocated are not now recommended. It should be used in the form of calciferol, which is a crystalline substance prepared by ultraviolet irradiation of ergosterol. It is effective by mouth and its effects continue 1 to 2 months after discontinuing medication. Dosage varies greatly but usually acute cases may be given 5,000 to 10,000 units daily, and resistant cases many times more. However, rarely are larger doses needed when other drugs as given herein are used simultaneously. The usual maintenance dose is about 1,000 units daily. Calciferol is antirachitic and primarily exerts its effect by aiding in the absorption of calcium from the gastrointestional tract.

The advent in 1934 of dihydrotachysterol (known as A.T. 10) greatly improved the outlook of those who developed persistent or chronic forms of tetany following parathyroid operations or injuries. This drug, as is calciferol, is a fraction of irradiated ergosterol and has the ability to bring about increased calcium absorption and increased phosphorus excretion. Its action is slow and several days of medication are necessary before its full effect is seen. Less calcium orally need be given when A.T. 10 is used. Usual doses of A.T. 10 range from 2 to 5 cc. weekly for maintenance but initially 3 or 4 cc. daily must be given for several days. Caution must be used with A.T. 10, as too large a dosage may produce hypercalcemia, as in the initial hyperparathyroidism. In chronic cases it can be continued indefinitely, but most patients may gradually discontinue it after several weeks or months. A.T. 10 is peculiar in that although it brings about calcium absorption it has no antirachitic properties. It is available in oil under the trade name of Hytakerol, by Winthrop. Each cc. contains 1.25 mg.

Parathyroid hormone is available as a standardized extract of the parathyroid gland. It is recommended in the treatment of acute tetany of parathyroid disease for emergency and temporary treatment only. It must be administered hypodermically and if given in doses of 1 to 3 cc. will raise the serum calcium level within a few hours. To maintain this elevation smaller doses, .2 to .4 cc. must be given every 12 hours. When parathyroid hormone is used, it usually is in a critically ill patient who is unable to take oral medication. As soon as recovery has occurred to the extent that the patient can swallow, oral medication is begun with other drugs and the hormone gradually tapered off over several days. Patients become resistent to the hormone if continued very long, and increasingly larger doses are needed. Hence it is important to start oral treatment as soon as possible.

In the follow-up of patients having hyperparathyroidism who have undergone operation there are two important events to be kept in mind. One is the possibility that the disease may not have been cured —primarily because not all or not enough parathyroid tissue was removed. In that case the findings of the original disease persist and further operative exploration must be done. The second possibility is the development of tetany. The acute form comes in the immediate post-operative period, and treatment has been outlined above. There is no set order

of onset of symptoms. At times the sudden occurrence without warning of a generalized convulsion may necessitate every emergency measure at our command. As a rule, however, there are warning signs. Visual difficulty and blurring of vision may be the first sign and may be present for several days before other complaints develop. Numbness of the hands, face, or legs, with tingling is commonly noted. The so-called "carpopedal spasm" does occur but not as commonly as other symptoms. Chevostek's sign, elicited by tapping over the facial nerve and in positive cases noting the spasm of facial muscles on the corresponding side, is usually positive. Trousseau's sign is elicited by constriction of the upper arm and noting spasm of the muscles in the forearm below. It becomes positive after Chevostek's but is the more reliable sign of the two. In some cases a chronic form of parathyroid insufficiency develops which may give rise to many vague complaints. Unless the possibility of chronic hypocalcemia is kept in mind, considerable harm and damage may be done to the patient. The absence of actual tetany does not rule out parathyroid insufficiency because certain patients gradually become accustomed to a low serum calcium and are able to carry on to some extent in spite of their complaints. One of the most serious of the disturbances that may occur is the formation of bilateral cataracts. Once formed, they cannot be changed by treatment. Weakness, disturbances in nail growth, crying spells without apparent cause, mental changes and retardation, areas of brain calcification may develop if the state of chronic tetany is allowed to persist long enough. Indeed, with such an array of vague complaints one must keep in mind the possibility of chronic tetany in any patient who has had a thyroid gland or parathyroid gland operation and whose complaints cannot be accounted for otherwise.

One case encountered in private practice is herewith presented.

Mr. C. H. T., Sr., aged 60 (Aug. 31, 1948)

Past History: The patient had the usual childhood diseases, all with good recovery. Pneumonia at 18 yrs. of age with no complications. In 1931 the semilunar cartilage was removed from the right knee following an injury. In 1933 a fracture of the left patella was sustained in an automobile accident and repaired by open reduction. In 1947 the patient stumbled. fell backwards injurying his left elbow. X-ray showed a small fragment broken from the olecranon process. This was repaired at open operation. It was noted at that time that the fragments did not show up well on the X-ray plates and at operation they seemed unduly fragile.

C.R.—Negative.

G.I.—Was treated for stomach trouble in 1943 for about 1½ yrs. Diagnosed as "hyperacidity". Otherwise negative.

N.M.—Negative.

G.U.—Nocturia one time for 3 or 4 years. For about 10 years prior to the present illness he has "loved water and always drank a lot of it". He consumed about 8 to 10 glasses daily, and passed a lot of urine during the day but was not bothered at night with having to void other than the one time given above. In 1946 he was examined by several physicians because of pain in the back and sacral region. He was told that he had a little prostate gland trouble and a little pus in the urine. He was treated for about three weeks and dismissed.

F.H.—No familial diseases. Two brothers and one sister alive and well. One sister died at 26 yrs. of age following an operation for "tumor" "between the kidneys". Wife and five children alive and well. Mother and father died at 73 and 83 yrs. of age of pneumonia and hardening of the arteries.

Present Illness. The patient presented himself during January, 1948, with complaints of pain in the back and sacrum and with weakness. Pain had gradually developed over a period of 2 or 3 years together with weakness. Becoming more and more severe it was only with effort that he was able to carry on his work. Pain was most marked when up and about, that is, when weight bearing, and did not bother him at night. As to his weakness, he did not feel tired but seemed to lack muscular strength. His symptoms finally became so severe that he took to bed on January 1, 1948. He was examined and found to have a spinal curvature and some tenderness of the lumbar muscles. He was treated with salicylates orally, rest on a flat bed, heat and massage locally. After a week or so he was able to return to work only to be disabled again after a few days with the same complaints. He was re-examined and X-rays ordered of the lumbo-dorsal spine and pelvis. Upon these it was seen that the vertebrae showed marked compression deformities and decalcification. In addition very heavy deposits of

calcium were noted in the kidneys. Whereupon, chemical examination of the blood showed a serum calcium of 15.5 mg. % and phosphates of 2 mg. %. The patient was then sent to the University of Virginia with a diagnosis of hyper-parathyroidism.

There, in January, 1948, a meticulous exploration of the neck lasting 4½ hours was done. A large parathyroid adenoma the size of a small pear was removed. The patient's post-operative course was very critical and his N.P.N. at one time rose to 250 mg. He eventually recovered and returned home on February 9, 1948, for convalescence. After being at home about 10 days he began to have muscle cramps in his legs and to lose his appetite. Nothing definite could be found, but hypocalcemia was suspected and he was given calcium intravenously and orally. He improved at once. This was continued for about 10 days, followed by oral calcium alone. He did not complain and was very well for another 10 days. At mid-night on March 22, 1948, he developed without warning a generalized tetanic convulsion. He was immediately given calcium intravenously but before the administration could be completed he had a second convulsion. This was a generalized tonic contracture of all his muscles and was of the most extreme character with carpo-pedal and laryngeal spasms. Muscle contracture was so great that fractures of both hips, the rt. clavicle, and the rt. humerus resulted.

Within about 2 hrs. he received 50 c.c. of calcium gluconate 10% solution intravenously; also an infusion of 1,000 c.c. of three chlorides (K, Na, Ca) in 10% glucose. In addition he was given 5 gr. of sodium luminal and transported to the hospital. During the next few days he received large doses of calcium chloride, oral calcium, parathyroid hormone and Hytakerol. Blood calcium determinations generally were very low, ranging from 4.2 mg. % to 7.2 mg. %. He also received five blood transfusions because of a severe anemia. He gradually improved. Calcium levels were followed by use of the Sulkowitch test on the urine. An N.P.N. was 57 mg. %. After two weeks the patient was allowed to go home on oral calcium lactate 6 teaspoonsful four times daily, Hytakerol 1 c.c. three times daily, and dilute hydrochloric acid 15 drops in water with meals.

After leaving the hospital the patient's convalescence was uneventful. Gradually his medication has been reduced until at present he is on small doses of calcium lactate, and a preparation of crude liver extract with B complex which his wife administers twice weekly hypodermically.

The fractures of the clavicle and humerus sustained during the convulsions were not immobilized any more than to allow the arm to be at rest in as comfortable a position as the patient could find for it. They cause no disability now. The hip fractures were never discovered until 10 months later when he was subject to another X-ray examination because of persistent eversion of the legs and feet and difficulty in walking. Indeed, the patient never voiced much complaint about his legs or hips until he began to try to get about. At present he is able to carry on his usual office work for eight hours daily and to get about fairly well on crutches. Blood examinations in March and June, 1949, showed calcium and phosphate to be normal. The N.P.N. remains elevated at 62 to 67 mg. %.

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The Cost of Doctoring.

The American Medical Association's economics expert, Dr. Frank G. Dickinson, announced in *Time,* August 7, 1950 that the cost of medical care in the United States has not gone up as far or as fast as the cost of living. Using Department of Labor figures, Dr. Dickinson claimed that the cost of medical care (including drugs) for the year 1949 was 45% higher than in the "normal" years of 1935-39, while the cost of living was up 69%.

Included in the overall medical figure were doctors' fees, up 38%; dentists' fees, up 51%; prescriptions, up 37%; and hospital rates, up 127% (but the average stay in hospital was shorter, so that the patient's bill went up only 67%).

RADIOACTIVE IODINE STUDIES FOLLOWING HEMITHYROIDECTOMY FOR CARCINOMA OF THE THYROID; A POSSIBLE AID IN THE DIAGNOSIS OF EARLY METASTASES— A CASE REPORT

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Radioactive iodine, I^{131}, has now been extensively used for the diagnosis and treatment of thyroid disorders. The treatment of thyroid malignancy with radioactive iodine has been disappointing because of the small percentage of tumors which will take up iodine. The diagnosis of metastatic lesions of the thyroid with this agent will also be limited. However, any agent which offers any chance of early diagnosis should be used. We wish to report our experience with radioactive iodine, following hemithyroidectomy for carcinoma of the thyroid, as an aid in the diagnosis of metastases.

CASE REPORT†

Mrs. G. A., a 32 year old white female, was first seen in the Ochsner Clinic on June 15, 1948. She stated that on April 1, 1949, she first noticed a small mass on the left side of the neck just anterior to the left sternocleidomastoid muscle. At this time she was three weeks post partum. The mass was still present at the sixth week post partum check. A biopsy was advised and this was done on June 9, 1948. The pathological report was adenocarcinoma, metastatic, probably from the thyroid gland. She was referred to our clinic for treatment.

At the time of admission on June 15, 1948, she had no complaints. Past history was essentially negative except for the removal of a fibroadenoma from the left breast in May, 1947.

Physical examination was entirely negative except for a recent surgical wound in the left anterior cervical triangle. The thyroid gland was not palpable and no cervical adenopathy could be palpated.

Laboratory examination revealed the following: RBC 4.38; Hbg. 13.7 gm., WBC 9,150, P.—70, L.—32, M.—5; Urinalysis—negative, Serology—negative, BMR—7, —9, Sedimentation rate 15 mm. per hour (Wintrobe), Cholesterol—309. X-rays of the chest, pelvis, and skull were reported as normal.

The patient was advised to enter the hospital for thyroid surgery. She was admitted to the Ochsner Medical Foundation Hospital on June 21, 1948.

First Hospital Admission June 21, 1948.

On June 22, 1948, the patient underwent a left hemithyroidectomy and left cervical gland dissection. The thyroid isthmus was also removed. The patient withstood the operation very well and was discharged on the fifth post-operative day with instructions to receive deep x-ray therapy from her local physician.

Pathological report was as follows: Gross—A 4 gm. thyroid lobe measuring 4 x 3 x 1.5 cm. presenting at one pole a circumscribed 1 x 1.5 cm. firm, grayish tumor; Microscopic—papillary adenocarcinoma of the thyroid. Note: "The histological appearance of the node previously removed from the neck is identical to that described for the above primary lesion".

Follow Up Examinations—January 18, 1949.

The patient stated that she had x-ray therapy as advised. From July 10 to July 30, 1948, she received 9 x 300 r. to each of two areas over the neck. Each field received a total of 2,700 r. The right neck port measured 7 cm. in diameter, and the left 10 x 10 cm. The ports were treated on alternate days.

On October 25, 1948, a nodule was removed from the left cervical area posterior to the left sternocleidomastoid muscle. The pathological report was metastatic adenocarcinoma. The pathologist stated that "the post irradiation specimen was indistinguishable from that taken before irradiation therapy was begun".

She stated that for the last two months she had felt perfectly well. Physical examination of the neck revealed no evidence of nodularity in any area. She was advised to return in one month for tracer studies with radioactive iodine.

Second Hospital Admission—February 21, 1949.

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†We wish to express our appreciation to Dr. Champ Lyons of the Ochsner Clinic for referring this patient to us for studies with radioactive iodine.

The patient was admitted to the hospital for tracer studies with radioactive iodine. She had no complaints at this time. A surgical consultant felt that there was a questionable palpable node on the left side of the neck anterior to the left sternocleidomastoid muscle. He felt that this had not been present on the follow up examination on January 18, 1949.

Laboratory examinations including complete blood count, urinalysis, and blood chemistry were all within normal limits except for a sedimentation rate of 40 mm. per hour (Wintrobe).

The patient was given a tracer dose of one hundred (100) microcuries of radioactive iodine, I^{131}, by mouth. Twenty-four hours later the uptake over various areas of the body was determined. All readings were made with a Geiger-Mueller tube enclosed in a lead shield 1.5 cm. in thickness. The shield had a small rectangular window 3 cm. x 0.5 cm. which served as the counting surface. All counts were made with the shield approximating the skin. The results are shown in Table I.

Table I

Area	CTS/MIN
Thyroid Isthmus	2,034
Thyroid—Right Lobe	2,228
Thyroid—Left Lobe	810
Femur—Left	60
Forehead	66
Cervical Spine—7th	306
Thoracic Spine—12th	96

Uptake of I^{131} in CTS/MIN previous to radical neck dissection.

As a result of the questionable node in the neck, the increased sedimentation rate, and the tracer studies, the patient was advised to have an exploration of the left cervical area for possible metastases. Twenty-four hours before surgery the patient was given a repeat tracer dose of one hundred (100) microcuries of radioactive iodine, I^{131}.

A left radical neck dissection was performed by Dr. Champ Lyons with ligation of the internal jugular vein and removal of the carotid sheath and left sternocleidomastoid muscle. A node 2 x 1 x 1 cm. was found deep to the left sternocleidomastoid muscle just above the clavicle. This node was removed for pathological examination and survey for the presence of radioactivity.

The pathological report of the node was as follows: "A well differentiated papillary adenocarcinoma of the thyroid metastatic in a lymph node". The surface radiation from this node was 228 cts/min. A piece of muscle of approximate size removed from the same area had no detectable radiation.

Six days after surgery the patient was given another tracer dose of seventy-five (75) microcuries of radioactive iodine, I^{131}. The general pattern of surface radiation was again obtained by the same technique. The results are shown in Table II.

Table II

Area	CTS/MIN
Thyroid Isthmus	2,988
Thyroid—Right Lobe	3,288
Thyroid—Left Lobe	780
Femur—Left	12
Forehead	12
Cervical Spine	378

Uptake of I^{131} in CTS/MIN after radical neck dissection.

The patient had an uneventful recovery and was discharged on the seventh post-operative day.

Discussion

A review of the literature did not reveal any data on tracer studies carried out in a patient with a previous hemithyroidectomy. The interpretation of the tracer studies previous to surgery was difficult to evaluate. The problem was to decide if the radiation over the left anterior cervical area was due to collection of radioactive iodine in a node or merely to the scatter radiation from the remaining right lobe and isthmus. The area over the seventh cervical spine was chosen as an area equidistant from the right lobe of the thyroid which could be used for comparison with the left anterior cervical area. Previous to the radical neck dissection the counts/minute from the area over the left anterior cervical area was sixty-three (63) per cent greater than that from the area over the seventh cervical spine. After the radical neck dissection this difference was only fifty-two (52) per cent. The node removed from the left anterior cervical area contained radioactive iodine. This would seem to indicate the radiation from the node was contributing to the total radiation in the left cervical area. The greater part of the radiation in this area was coming from the remaining right lobe.

We wish to emphasize that the decision to explore the left cervical area was not determined by the tracer studies alone. As stated in the history there

was a suggestion of a mass in this area plus an elevated sedimentation rate. Our data indicate the difficulty that will be encountered in trying to evaluate tracer studies for early metastases in those cases where functioning thyroid tissue remains in the neck. Hemithyroidectomy remains the treatment of choice in those carcinomas of the thyroid confined to one lobe. For this reason, radioactive iodine will have a very limited use in the diagnosis of early metastases.

SUMMARY

A patient who had previously undergone a hemithyroidectomy for thyroid carcinoma was given tracer doses of radioactive iodine, I^{131} in an attempt to diagnose early metastases. The studies presented indicate that some early metastatic lesions of the thyroid will collect radioactive iodine. Those lesions that collect radioactive iodine may possibly be detected by tracer studies.

CONCLUSION

1. Radioactive iodine may be of value in the diagnosis of early metastatic lesions from carcinoma of the thyroid.

Saline Solution in Treatment of Burn Shock.

The Surgery Study Section of the National Institutes of Health has recommended to the Surgeon General, of the Public Health Service that the use of oral saline solutions be adopted as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian catastrophe, and there is sufficient evidence to suggest its use. After experimental work the Section stated that "Certain factors are important in governing the effectiveness of the oral administration of salt solutions. They are as follows:

"1. The composition of the salt solution: The most palatable salt solution is made by dissolving 3 to 4 grams of sodium chloride and 2 to 3 grams of sodium citrate in each liter of water. If sodium citrate is not available, ordinary baking soda may be substituted for it.

"2. The concentration of salt should not be in excess of 140 milliequivalents of sodium per liter. If the concentration is above this, vomiting and diarrhea became important complicating factors.

"3. Whenever profound peripheral circulatory collapse is present, the intravenous route of administration must be used until peripheral blood flow has been reestablished. The salt solutions that we have found most satisfactory for this purpose are Hartmann's solution (Lactate-Ringer's solution) or plasma. In addition to the salt solution or plasma intravenously, whole blood is given concurrently whenever peripheral circulatory collapse exists. This materially implements the effectiveness of salt solutions.

"The slightly hypotonic salt solution is the only drinking fluid permitted the injured individual until the edema of the injured parts begins to subside. Certain exceptions to this rule have to be made during the hot weather of summer when it is sometimes necessary to permit the partaking of some non-salty water.

"As much as 10 liters of the hypotonic salt solution have been drunk in the 24-hour period by adults who have been severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than 3 hours after being admitted to the hospital has suffered from anuria. The 'early toxemia phase' of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

"We feel that much more clinical observation and actual experimental work should be undertaken regarding the effectiveness of the basic principles of the supportive therapy of burns."

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

Harry Walker, M.D., *Editor*
William Kay, M.D., *Associate Editor*

Case No. B-78391

This 51 year old, married, colored female was admitted to the hospital with the chief complaint of pain in the arms and legs of five days' duration. The patient stated that she had had a "cold" for three or four weeks preceding this episode, with vague pains over the entire body. Five days ago, while in bed for the "cold", the patient began to notice a cramp-like pain in the legs and arms. The pain seemed to be definitely aggravated by moving the feet and legs, and by pressing on the calf or the muscles of the forearms. The pain became so severe in a matter of hours that the patient was unable to walk. There was no history of trauma to the extremities or of ulcers or other open lesions. There had been no joint swelling or joint pains noticed previous to the illness. The patient's past medical history was essentially negative. She had the usual childhood diseases without sequelae. There had been no operations. There was no history of tuberculosis, heart disease, kidney disease or diabetes. The patient's general health had been good. The patient had had two stillbirths and had eight living children. One died at an early age of pneumonia. Her last menstrual period had been approximately two years ago. The patient's family history was non-contributory.

Systems review was essentially negative with the exception of marked anorexia for three days.

Physical examination on admission showed a blood pressure of 160/100, temperature of 102.8° orally, pulse 130, and respiration 20. The patient appeared to be a well developed, obese, colored female lying quietly in bed in no acute distress. She was cooperative and mentally clear. However, some of the answers to questions appeared vague. Examination of the head was normal. The ears were normal. Eyes: There was questionable icteric tint to the sclerae. Fundoscopic demonstrated flat discs. The nose was normal. Teeth were carious, breath was foul, tongue was coated, red and rough, and the lips were dry. The neck appeared obese with no palpable masses, no spasm, and was supple to movement. The chest was symmetrical, respiratory movements equal bilaterally, breasts were pendulous, the lungs were clear to percussion and auscultation. Breath sounds seemed somewhat increased in intensity. Heart rate was 130, rhythm regular. There was no enlargement, no murmurs or thrills noted. Radial pulse was rapid, regular and bilaterally equal. Abdomen appeared obese; there were no masses or viscera felt, no fluid wave, spasm, or tenderness elicited. No herniae were found. Peristalsis seemed distant, percussion note was normal. Pelvic revealed a moderate whitish yellow discharge; the cervix was enlarged, eroded and bleeding. Rectal was normal. The reflexes were physiological. No gross palpable lymphadenopathy. Palpation of the extremities revealed marked tenderness in both calf muscles and muscles of the forearm. Left leg: There was a positive Homan's sign.

Admission urinalysis showed a cloudy, strongly acid urine with a specific gravity of 1.022, 3+ albumin, a trace of sugar, positive for both acetone and diacetic acid. There were 10-20 white blood cells per h.p.f. and a "few" red cells per h.p.f. There were many granular casts and epithelial cells found. Blood count showed a hemoglobin of 10 grams with 33,650 white cells with 89% polys., 1% basophil, 5% lymphs. and 5% monos. On the smear there appeared to be toxic granulation in the polymorphonuclear cells. The patient's serology was negative. The NPN was 69 mgs. %.

The patient was admitted to the Surgical Service and three hours later a bilateral lumbar sympathetic block done at L2, 3, and 4. There was some relief of pain. The feet and legs felt warmer. There was no sweating of feet and legs. On the second hospital day a medical consultant stated that examination showed a very obese patient with no localizing signs of phlebitis. The patient could scarcely move the legs due to pain and had a uremic odor to the breath. Respirations were 28 and appeared "acidotic" in type. The eye grounds could not be seen due to poor condition. There was a tachycardia with poor heart tones and A_2 was greater than P_2. There was a question of cardiac enlargement. The lungs were

clear to percussion and auscultation. There were no rales or rubs. The abdomen appeared soft, the spleen was not felt and the liver was questionably enlarged. No lymphadenopathy. Joints and extremities were negative except for the description of the pain in the legs. A repeat pelvic examination on the second hospital day revealed a foul-smelling, thick, white discharge from the cervix and vagina. The vulva, vagina and cervix appeared compatible with menopausal changes. The cervix was effaced and bled easily. A biopsy was taken from this area. The uterus and adnexae were not thought to be enlarged. The cervical biopsy report stated: "Mucosa of the cervix is fibrous and infiltrated with lymphocytes and mononuclears. Some of the ducts show squamous metaplasia. No suspicious foci in the four sections prepared." The patient continued to run a temperature between 102 and 103 on the second hospital day. Blood count on this day revealed 30,800 white cells with 88% polys., 12% lymphs. PSP test was done on the second hospital day with a one-hour concentration of 5% and two-hour concentration of 5%. Total of 10% excretion of dye. The Mosenthal test showed a top concentration of 1.015. Due to continued fever and leukocytosis, urinary changes, elevated NPN, and muscle spasm and tenderness, the patient was transferred to Medicine. A chest plate on the second day reported "No pneumonia seen. There were breast shadows at the costophrenic angles and there was prominence of the left ventricle and the innominate artery, with only very slight congestion." A right lateral x-ray and fluoroscopic examination of the chest reported "prominent innominate artery which did not displace the trachea. There was pulsation in it on fluoroscopy and it was seen in both projections. The aorta was arteriosclerotic, and sharply defined in both projections. The left ventricle was enlarged and there was slight pulmonary congestion. In the lateral view there was an oval density 4.5 x 4 cm. back of the heart. This was sharply defined, but not very uniform in appearance. The sharp definition and suggestion of some calcification would favor an old tuberculoma rather than a metastatic or primary nodule. The chest was somewhat emphysematous with large posterior anterior mediastinal spaces, but with not as much enlargement of the heart suggested on lateral as on PA view." Routine agglutinations, on the second hospital day, were negative for typhoid "O," typhoid "H," para "B," K-19, and brucella. A progress note made on the third hospital day noted the blood pressure was 164/105, fundoscopic examination revealed no choking, hemorrhages or exudates seen. There was no nuchal rigidity found and no jaundice. The lungs were clear, the heart was negative except for enlargement to the left and tachycardia. The abdomen was negative, slight tenderness in both costovertebral angles and there was 1+ pretibial edema. There was a positive Homan's sign bilaterally. There were no palpable veins felt in the legs. There was marked tenderness over both calves, and left thigh muscles. On the third hospital day the CO_2 combining power was reported as 46.6 vol.% or 21 mEq. A peripheral blood smear showed a marked leukocytosis with an increase in the neutrophils and monocytes. Platelets were greatly increased. The red cells were normocytic, normochromic with little polychromasia. The sternal marrow smear showed fairly marked hyperplasia of the myeloid cells, fairly marked hypoplasia of the erythroid cells. Megacaryocytes showed marked platelet production. Sodium was reported as 129 mEq and potassium as 4.9 mEq. NPN on the third day was reported as 92 mgm.%. Chlorides were 530 mgm.% or 91 mEq. Serum bilirubin was reported as direct or immediate 2.3 mgm.% and indirect or total as 3 mgm.%. Calcium was reported as 11.2 and phosphates were reported as 7.6 mgm.%. On the fifth hospital day a lumbar puncture was done. The pressure was not recorded. 10 cc. of clear colorless fluid was recovered and sent to the laboratory with the report of spinal protein 20 mgm.%, no cells seen, mastic reported as 2-1-1-0-0. Spinal fluid Wassermann was negative. On the fifth hospital day an icteric index was reported as 9 units, the NPN had risen to 119 mgm.% with a creatinine 7.9 mgm.%. Blood sugar was 150 mgm.% and the chlorides were 648 mgm.% or 101 mEq/liter. Heterophile agglutination was negative. The electrocardiogram was reported within normal limits with the exception of a slight axis deviation and a sinus tachycardia. The patient's treatment from day of admission to this point had consisted of penicillin 100,000 units, q 3 h, I. V. glucose in water and in normal saline supplemented by vitamins. On the sixth hospital day the patient became confused, refused to accept feedings. A stomach tube was inserted, and 3,000 calorie tube feeding diet ordered. The patient developed frequent loose bowel move-

ments and became more confused. On the sixth hospital day blood culture was returned as negative, the NPN had now reached 137 mgm.%, the CO_2 combining power was 40 vol.% or 18 mEq. The patient continued to run a temperature between 101 F. and 102 F. and the patient's blood pressure during her hospital stay from the day of admission until the sixth hospital day seemed to be gradually rising. The highest level that was recorded during this period was 250/135. This gradually returned to 140/100, later to rise to 220/100. The blood count on the eighth hospital day was reported as red count 2,780,000, hemoglobin 7.5 grams, white cells 29,100 with 89% polys., 1% basophils and 10% lymphs. with toxic granulations seen. The patient's clinical course on the eighth hospital day took a decided turn for the worse; her breathing became labored, she began to aspirate mucus and became markedly confused. There was a uremic frost noted on the face. Bilirubin on this day was reported as direct 0.8 mgm.%, total 1.2 mgm.%, icteric index 11 units, sodium 130 mEq/liter, potassium 7.2 mEq/liter, CO_2 combining power 32.4 vol.% or 14.5 mEq, chlorides 578 mgm.% or 99 mEq/liter. Three blood cultures were reported as negative on that day. Treatment consisted of intravenous fluids, tube feedings and penicillin, 100,000 units every 3 hours. On the eighth hospital day aureomycin, 250 mgm. every three hours was started via nasal tube and streptomycin, grams ½ four times a day started. During the eighth hospital night the patient was markedly restless, struggling, and frost seemed to be increasing. At 3:15 A. M. on the ninth day the patient ceased to breathe.

Discussion by Dr. Reno Porter.*

I might say to start that I think this is a very excellently prepared protocol. It has all of the essential facts I think we need to make a presumptive diagnosis.

It is a very long protocol so I won't bother to read all of it but will just mention the salient features. We have a 51 year old, colored, married woman, who stated that she had had a cold for about three or four weeks prior to admission and, for the past five days had been having rather severe cramp-like pains in her legs and forearms. She also had some anorexia. The rest of the history is more or less non-contributory.

*Associate Professor of Medicine, Medical College of Virginia, Richmond.

On physical examination we find a well-developed, colored, obese female with a temperature of 102 F. and a pulse of 130. The essential features on physical examination were a slight icterus, a moderate whitish yellow discharge from the cervix, and definite calf muscle and forearm muscle tenderness. She also has a positive Homan's sign. From what I can gather, this is about all that was found when this patient came in to the hospital.

From the protocol history it is implied that bilateral thrombophlebitis was suspected. Homan's sign, of course, is supposedly a pathognomonic sign of thrombophlebitis. However, it must be realized that any type of calf muscle disease, such as a myositis would give a positive Homan's sign since it is a matter of contracting diseased muscles, and this would give pain just as well as having an inflamed venous channel.

The laboratory gives us important data: The urine's specific gravity was 1.022, which on routine examination is a good concentration. Albumin was 3+, a trace of sugar, and positives for both acetone and diacetic acid. Acetone and diacetic acid, generally speaking, may be due to faulty catabolic metabolism such as occurs in diabetes, which may be suspected in this case because of glycosuria, and it may also occur in any type of disease that involves loss of protein or loss of tissue, or even simple starvation.

There were 10-20 white blood cells per H.P.F. and a few red cells per H.P.F.; there were also many granular casts. She had a moderate anemia with a hemoglobin of 10 grams and a marked polymorphonuclear leukocytosis. There is no mention here of any other cells we are particularly interested in, namely eosinophils, but apparently there was no eosinophilia. The cells on smear show toxic degeneration. She has an NPN of 69 mgm.%.

As I have said, on admission she was apparently suspected of having thrombophlebitis for which she had a bilateral lumbar sympathetic block. This resulted in warm extremities and absence of sweating, so we assume it was a good procedure; in other words, a satisfactory procedure—they did an actual sympathetic block. The patient stated she had some improvement in her pain, but apparently it was very transient because the next day she was seen by a medical consultant because of rather severe pain.

Additional findings at that time showed the pa-

tient was suspected of having cardiac enlargement, also a uremic odor to her breath, and supposedly acidotic breathing. The remainder of the findings of that special consultant were essentially as before.

She continued to run a temperature of 102-103° F. as well as a continued marked leukocytosis, the polymorphonuclear cells being 88%. The PSP showed diminished renal function. It is interesting to note that the Mosenthal test, which is supposedly a test of renal concentration, showed only a concentration of 1.015. Now that is a disconcerting thing we find very frequently, that routine urinalyses have higher specific gravities than those obtained by Mosenthal when we theoretically have the patient under stress of dehydration; certainly other evidences here indicate that the patient had impaired renal function, and perhaps the initial high level was due to other substances in the urine, such as albumin and certain other elements which might raise the concentration or the renal lesion may have progressed in the meantime.

She was transferred to the Medical Service. A chest x-ray was taken and reported as showing some left ventricular enlargement and a sharply-defined arteriosclerotic aorta.

It is noted that her blood pressure was somewhat elevated on admission, and it has continued to rise. It was 164/105 at this particular point in her clinical course. Fundoscopic examination, rather important, revealed no choking, hemorrhages or exudates. No nuchal rigidity was found. There was slight tenderness in both costovertebral angles and a 1+ pretibial edema. There continued to be positive Homan's sign, but no veins were palpable. She continued to have tenderness over both calves and left thigh muscles. The CO_2 combining power was essentially normal at this time. The platelets were greatly increased and the red cells were thought to be normocytic, normochromic, with a little polychromasis.

The rest of the studies are not of particular importance, I believe—at least they don't contribute much to my interpretation of the case, except for the slight degree of icterus with serum bilirubin of 2.3 indirect and a total of 3 mgm., which is somewhat elevated. Lumbar puncture was done which showed nothing of significance. NPN continued to rise, now 119 mgm.%, blood sugar 150—again this brings us to a possibility of some disturbance like diabetes, or maybe some result of a general derangement of the entire body that is probably going on.

Her hospital course, more or less continued downhill with a rising NPN, rising blood pressure, an increase of polymorphonuclear cells but no particular increase in the jaundice. She died on the 9th hospital day.

That, in summary, is the information we get from the protocol of this 51-year old female patient who comes in complaining of muscle pains, shows a phenomena of renal failure, and dies rather promptly within two weeks after the onset of her more acute symptoms, and within a month after the onset of any complaint at all, which, to me, is a very rapid progress of her disease. It seems obvious that this patient had some form of renal disease. We recognize it by the urinary findings, by the impaired function as manifested by PSP and later by Mosenthal test; and finally, by a rising NPN, uremia and death.

We also have this disturbance in the muscles that is emphasized so in the history. She had marked pain, cramp-like pains in her muscles, particularly her extremities, and they were markedly tender. Nothing further is said regarding the state of the skin and subcutaneous tissues, so I am accepting it as that; in other words, there was no edema particularly except later on, which is pretibial; there was no skin rash of any kind; there was no brawny thickening of the muscles themselves as we frequently see in certain conditions—they were simply tender, painful muscles.

Now the problem is, does this all tie up together —or do we have two separate diseases: I believe we should try to tie things together on one etiological basis. We should, therefore, consider what single pathological entities could best explain all these findings. In the first place, I certainly think that we must think of malignant hypertension in any patient who has a rapidly progressing renal failure plus some evidence of heart disease. Certainly this renal picture is consistent with this diagnosis, especially the rapidly failing kidney and a rapid downhill clinical course. However, we don't get the muscle disturbance that is seen here, and certainly I think that the fundoscopic examination rules out malignant hypertension.

When we are faced with the symptom of painful muscles, we must consider the so-called "Diseases of

Collogen." This is a group of disorders showing more or less similar reaction of collogen tissue but of unknown etiology and with different clinical picture. One of these is dermatomyositis, a condition involving the small arterials of the body, but manifested by actual dermititis and markedly painful sore muscles. There are many things here that don't fit in with dermatomyositis, chief of which is the absence of characteristic skin lesions. In addition, dermatomyositis doesn't ordinarily result in any renal damage so far as I know. Therefore, I think we can exclude this as the single etiological factor.

Scleroderma, which is closely related to dermatomyositis, is suggested by the muscular lesions, but I think is a even more remote possibility than dermatomyositis.

Another of this group of diseases to consider is that of lupus erythematosis. This again is another disease of small blood vessels which can involve most of the organs of the body, but ordinarily is characterized by a typical skin eruption, although it may be absent in some cases. It is more prone to occur among women which fits in here, but its most striking characteristic that rules it out, as far as this patient is concerned, is the absence of a leukopenia. In this patient we have a marked leukocytosis. In addition, in the typical picture of lupus, there is more of an arthritis than a myositis which this patient had.

And now we come to one condition this group of disorders which I think is the most probable explanation of this patient's findings. That is periarteritis nodosa. It is a general systemic disease with multiple manifestations secondary to widespread arterial involvement throughout the body. It could certainly produce the muscle pain and tenderness which this patient had. It could, also, give the high fever, as well as the leukocytosis. Some cases have been reported with leukocytosis 45,000. We know that it can produce widespread disease in many organs. Involvement of the liver may result in jaundice. The pancreas may be involved, resulting in a diabetic picture. There usually is involvement of the kidney, such as this patient had, with renal failure, azotemia and death. Lesions present in the heart and lungs together with the hypertension can give us cardiac enlargement and failure. So that, to me, periarteritis nodosa presents a very probable picture here. Certainly it could account for all the symptoms and signs which this patient presented.

I am a little disturbed, however, by the rapid downhill course that this patient had. From what I understand about periarteritis nodosa, it is a condition which only lasts several months—there are some cases that have recovered from so-called pseudo-periarteritis nodosa but ordinarily we don't see patients die within a little over a month from this disease. That to me is not too much against it because everything else fits pretty well. We often see some eosinophilia when we have periarteritis nodosa but as you know that necessarily does not have to be present. In one series, only 19 cases out of 101 had any degree of eosinophilia; so, actually, it is not a common finding.

Now, I think we should consider some other things because there certainly are other possibilities. When we get to infectious processes, assuming that these others are not infectious, although they may be, in anyone with painful sore muscles we think we have to think of trichiniasis, and certainly the picture this patient presents, as far as the muscles are concerned and the overwhelming condition she had and her death, could be explained on the basis of overwhelming infection of trichiniasis. I am not acquainted, however, with renal lesions in trichiniasis, so as the cause for the total picture, I must exclude it.

We might briefly mention the rickettsial diseases, because they are characterized by widespread arterial disease which this case represents, but again, because there was no rash, I shall exclude these.

I think we ought to consider Weil's Disease. It has many of the characteristics which this patient presented; a rapidly fulminating condition which can involve various organs, particularly the kidney and the liver. It is associated with a high fever, a very toxic reaction, and they can die in a rather short time, such as this patient did. I think Weil's Disease must be given serious consideration. However, this case does not quite fit it because ordinarily there is marked jaundice with Weil's Disease. In many cases of Weil's Disease there is no jaundiced stage, but these cases ordinarily recover. I think most of them who have died had a marked degree of jaundice, which apparently this patient did not have.

There is no record on the protocol as to a complement fixation test. In diagnosing Weil's Disease we are dependent upon either recovering the organism or the complement fixation test. In the first week we can recover the organisms from the blood and in

the second week we can recover them from the urine. The complement fixation test is ordinarily not positive until the tenth day or later. However, according to most authorities, you can't be sure that Weil's Disease is ruled out until the test remains negative for 30 days. I think it is an unlikely diagnosis but it is my second choice.

There are probably a few other conditions we should think about, such as lead poisoning. This condition can give rise to a neuritis, and sometimes findings quite similar to a myositis, as well as the renal damage which this patient had. I think it is a very remote possibility.

Finally, I think we ought to consider the question of a thrombophlebitis, because, after all, that was the initial hospital impression. Certainly this wasn't ordinary thrombophlebitis. The condition we speak of is thrombophlebitis migrans, which can involve many vessels all over the body and can produce considerable pain and tenderness. In this condition, however, only the superficial veins are involved, and they are readily seen and noted. We get the impression in this case that nothing was noted about the veins being abnormal and no veins were palpable. I think, therefore, we can rule out phlebitis of any kind here as an isolated phenomena.

Those are about all the conditions I know of that can give rise to all of the varied manifestations this patient had. As I intimated in my discussion, my first choice will be periarteritis nodosa. It can explain all of the manifestations this patient showed. My only hesitation is the rapidity of the course. My second choice would be Weil's Disease; the rapid course is more like Weil's Disease, but we have very few of the manifestations we would anticipate. Of course, we don't know exactly what went on here—we might find that the patient had chronic glomerulonephritis, as one condition, and something else causing this peculiar difficulty with the muscles, and that could be trichiniasis, or maybe dermatomyositis, or some such situation as that. I cannot exclude the possibility that we are dealing with two situations; however, I'll stick to periarteritis nodosa.

Hospital diagnosis: Weil's Disease.

Dr. Porter's diagnosis: Periarteritis nodosa.

PATHOLOGICAL REPORT: DR. E. E. PAULTER*.

The body was an obese colored female with a protuberant abdomen and a 3 cm. decubitus ulcer over the left buttock. A slight icteric tinge was noted in the 6 cm. of subcutaneous fat.

Grossly the heart weighed 480 Gm. and revealed dilatation of the right side with moderate hypertrophy of the left. There was minimal atherosclerosis of the coronary arteries with slight fibrosis of the mitral and aortic valves. The aorta also showed moderate sclerotic changes. A small adenoma was located in the right upper pole of the thyroid and all four parathyroid glands had adenomatous hyperplasia. The lungs showed patchy atelectasis, edema, emphysema and early focal pneumonia. The liver was enlarged, weighing 2,350 Gm. The kidneys were enlarged, firm and pale. The right weighed 400 Gm. while the left was 450 Gm. The upper portions of both ureters were slightly dilated. The uterus contained multiple small leiomyomata while the cervix revealed a chronic cystic cervicitis.

Histologically the most significant findings were in the vessels of the liver, periadrenal fat, renal pelvis and small intestine. The walls of the small arteries and arterioles were necrotic, edematous and infiltrated by polymorphonuclear leukocytes, lymphocytes, plasma cells, and macrophages. This same process extended out into the surrounding tissue. Some vessels contained small thrombi. The infection tended to be focal in some vessels while in others it was located more extensively perivascularly. The changes are consistent with an acute necrotizing polyarteritis.

In the kidney the glomeruli were slightly enlarged and cellular due to slight polymorphonuclear leukocytic infiltration and edema. It is an acute glomerulitis or acute exudative glomerulonephritis (and is not to be confused with the usual acute proliferative type). The interstitial spaces contained lymphocytes, plasma cells and a few eosinophilic and polymorphonuclear leukocytes along with some edema. The tubules have finely granular pink pigment casts in the lumen and show cloudy swelling, degeneration and desquamation of the epithelium. These findings are consistent with a lower nephron nephrosis.

The liver parenchyma revealed only cloudy swelling and no lesions suggestive of Weil's Disease were seen. Special strains for spirochetes were negative.

*Assistant in Pathology, Medical College of Virginia, Richmond.

The death is attributed to uremia.

Pathological diagnoses:

1. Acute polyarteritis (acute necrotizing arteries and arteriolitis—so-called periarteritis) of liver, periadrenal fat, duodenum and renal pelvis.

2. Lower nephron nephrosis and acute glomerulitis (acute exudative glomerulonephritis).

3. Dilatation and hyperthrophy of myocardium.

4. Arteriosclerotic valvular disease, aortic and mitral, minimal.

5. Atherosclerosis:

A. Aorta, moderate.

B. Coronary arteries, minimal.

6. Atelectasis, edema, emphysema and early focal pneumonia, pulmonary, bilateral.

7. Thyroid adenoma, right upper pole.

8. Hydroureter, bilateral, minimal.

9. Leiomyomata, uterus.

10. Adenomatous hyperplasia, parathyroid glands (x4).

11. Decubitus ulcer, skin, left buttock.

Comment:

The diffuse vascular lesions along with the renal picture suggests some sensitizing agent as the cause but the etiologic factor is not determined in the autopsy findings.

New Books.

Below are listed some of the newer books in the Tompkins-McCaw Library of the Medical College of Virginia, which are available to our readers under usual library rules:

Alexander, F.—Psychosomatic medicine.

Bacon, Harry E.—Anus, rectum, sigmoid colon: diagnosis and treatment. 3rd edition.

Burch & Winsor—A primer of electrocardiography. 2nd edition.

Cooper, Barber & Mitchell—Nutrition in health and disease. 11th edition.

Curtis & Huffman—Textbook of gynecology. 6th edition.

Eastman-Williams' obstetrics. 10th edition.

Frey-Wyssling — Submicroscopic morphology of protoplasm and its derivatives.

Gesell, *et al.*—Vision: its development in infant and child.

Harrison, T. R.—Principles of internal medicine.

Ivy, Grossman & Bachrach—Peptic ulcer.

Kanner—Child psychiatry. 2nd edition.

Kuhn—Eyes and industry. 2nd edition.

Los Alamos Sc. Lab.—The effects of atomic weapons.

Matheson, Robert—Medical entomology. 2nd edition.

Nelson, editor—Mitchell-Nelson's textbook of pediatrics. 5th edition.

Palyi—Compulsory medical care and the welfare state.

Pattee—Pattee's dietetics. 23rd edition.

Prather, G.—Urologic aspects of spinal cord injuries.

Rankin & Graham—Cancer of the colon and rectum. 2nd edition.

Recent progress in hormone research. Vol. 5, 1950.

Rubenstein—A treatise on contemporary religious jurisprudence.

Shapiro & Weiner—Coagulation, thrombosis and dicumarol.

Slaughter, Frank G.—Medicine for moderns.

Tidy, Noel M.—Massage and remedial exercise in medical and surgical conditions. 8th edition.

Willis, R. A.—Pathology of tumors.

Wood & Boag—Researches on the radiotherapy of oral cancer.

MEDICAL SOCIETY OF VIRGINIA

MESSAGE TO MEMBERS

Your A.M.A. Dues and Your Delegates to A.M.A.

It is with some concern that members of the Medical Society of Virginia are again approached regarding membership in the American Medical Association for 1950.

As of October 1, only 35% of the membership were credited with having paid their dues in the amount of $25 for A.M.A. It is believed that there exists some misunderstanding, since last year, when dues were not required, approximately 70% voluntarily contributed.

1950 is the first year in the history of the A.M.A. that dues have been required. Virginia's showing has certainly been less than impressive, and is far below the median for the nation. At least three states boast of having over 90% of their members paid up.

Representation in the House of Delegates of A.M.A. is based on paid-up membership in A.M.A., one for each thousand members, or fraction thereof. If Virginia has no more than one thousand members by December 31, her representation in the A.M.A. House of Delegates will be reduced from *three* to *one*.

Briefly, the situation is this: 1950 dues for A.M.A. membership are due immediately, and should be paid without delay to your local medical society, which in turn should forward the payment to the Medical Society of Virginia. After proper credit is recorded here, the payment will be sent to A.M.A. Those who became members of their local medical societies after July 1, need pay but $12.50.

* * * * * * *

Dr. Ernest B. Howard, Assistant Secretary of A.M.A., states that "Fellowship depends on membership, and will be forfeited if membership is forfeited." Present indications are that Fellowship dues in 1951 will be reduced to $5. Fellowship dues are paid directly to A.M.A., and separate receipts for same are sent directly to individual physicians by A.M.A.

It seems that Membership dues in A.M.A. for 1951 will remain the same ($25). However, the A.M.A. Journal will be sent free to members. Separate receipts for membership dues will be sent directly to individual physicians by A.M.A.

C. L. HARRELL, M.D.

Floral Eponym

Altamirano, Fernanco

ALTAMIRANOA

Dr. Fernando Altamirano was at one time director of the Institute Medico Nacional of the City of Mexico. He wrote a Mexican materia medica, a Manual of Mexican Herbs, St. Louis, Mo. 1904.

Altamiranoa are Sedum-like perennials. Twelve specimens are known of which five have been grown in Washington greenhouses and the New York Botanical Garden.

PUBLIC HEALTH

L. J. Roper, M.D.

State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for October 1950 as compared with the same month in 1949, and for the period of January through October 1950 as compared with the same period in 1949 is as follows:

	Oct. 1950	Oct. 1949	Jan.-Oct. 1950	Jan.-Oct. 1949
Typhoid and paratyphoid	11	26	79	130
Diarrhea and dysentery	211	530	3,460	5,431
Measles	65	28	2,605	21,304
Scarlet fever	82	75	726	589
Diphtheria	23	32	155	138
Poliomyelitis	188	58	1,068	305
Meningitis	4	0	98	73
Brucellosis	5	6	53	62
Rocky Mountain spotted fever	10	4	74	101
Tularemia	1	0	34	28

The Physician as Nutritionist

Since the public looks to the physician for advice in staying well as in getting well, the physician needs to keep aware of the nutritional needs of his patients.

The three protective foods most often lacking in sufficient quantities in winter menus are milk, fruits and vegetables. This may be due either to insufficient income, ignorance, indifference or bad food habits. The Foods and Nutrition Board of the National Research Council has set up recommended allowances for various food nutrients for different age groups. Using this as a guide, surveys of food intake and food distribution have indicated that the diets of a high percentage of people do not meet these recommendations. Many people do not know what constitutes a good diet while others are not convinced that food makes any difference.

Every day is a growing day for a child, and good food, regularity and simplicity are essential. A child should be given the best opportunity for growth and good health by beginning the day with a *good breakfast*. Education should begin in earliest childhood in order to establish good eating habits, and should be continued intensively and persistently without interruption.

The high consumption of concentrated sweets and other foods of high carbohydrate value may be the reason that more essential foods are crowded out at meal time. In this connection should be kept in mind the theory of the frustrated person who may eat himself into obesity.

The practice of omitting breakfast or eating a breakfast of poor quality, such as coffee and a sweet roll, has serious implications when one considers the newer concepts of nutrition, such as that of protein supplementation.

There is an optimum diet for good health. A good school lunch is a very important tool for the improvement of child health, but the school lunch provides only one-third of the child's daily food requirements —the remaining two-thirds must be provided at home.

It is the responsibility of parents, with the help of their physician, to assist children in developing healthy attitudes toward food. By themselves following proper eating practices, parents can materially help children in establishing good eating habits.

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Emotional Problems of Children*

Psychiatric knowledge has made it plain that people show their emotional difficulties indirectly rather than directly. This statement is true of adults. It is even more clearly evident in the case of children. They have greater need of indirect expressions of their emotional troubles than do grown-ups, because they have less facility in expressing them verbally. In general, there are two common methods of emotional expression in children. One is through changes in the bodily economy. The various types of disorders and complaints dealt with in psychosomatic medicine are essentially emotional expressions. The other means of expression is in overt behavior. The various behavior problems of children are, like the psychosomatic disorders, ways in which the youngsters express their feelings. Unfortunately, these feelings are usually not understood as such by the parents.

The factors which cause emotional difficulties in children are many and varied. By and large, they stem from the frustration of children's needs. Frustration of one's needs is, of course, an essential part of human life. Each of us has to learn how to curb his own desires so that he can be a social being. Children must be taught this, and in so doing they are subjected to a great deal of frustration. We may well ask how one can avoid creating problems in children if frustration is, thus, inevitable as a part of growth. The answer is to be found in the fact that the tolerance of the child for frustration of his needs and desires is something that grows and develops with life. If the child is subjected to frustration in too severe a form or at too early an age, so that he is unable to tolerate the deprivation, deep emotional problems result.

It would be well to call attention at this time more especially to those needs which suffer frustration most frequently. First of all, we must note that a child needs love. This is normally received from the parents. We would be making a severe error if we were to suppose that the giving of love by the parents is a universal phenomenon. Such is not the case. There is in our American culture a very high ideal of parental love. This sometimes blinds us to the fact that the mere physical act of being a parent does not necessarily mean that the father or mother loves the child. Those of us who are doing clinical work with problem children see very many cases in which there is rejection of the children by the parents rather than any true love of them. Moreover, one must recognize that the rejecting parent is himself or herself faced with a conflict between his or her own feelings and demands that society puts upon him or her to be a good parent. Relatively few fathers and mothers can face the fact of rejection. Most of them conceal it from themselves by blaming it upon the child's behavior or else by indulging in some type of compensation, usually overprotective attitude. Parental overprotection can be understood as compensatory behavior upon the part of the parent, compensating either for deep rejection of the child or for some lack in the parent's own life.

The growing child feels a need to accomplish something. Often circumstances are such that the child is not able to do anything well. This may be due to causes inherent in the child himself, such as actual physical or mental inferiorities. More frequently, it is due to attitudes of the people around the child, who fail to provide him with any situations in which he may do something successfully.

This discussion of parental attitudes should not in any sense blind us to the fact that there are many other influences in the child's life which may cause frustration. The parents are seen as most important simply because they form the most prominent part of the child's environment during the very impressionable and formative early years of life. The rivalries which occur between brothers and sisters play a very considerable part in shaping emotional drives. As the child becomes older, his response to and treatment by his companions plays an increasingly important role in his life. A little later, the child goes to school. There he has to meet competition with other children, good and bad attitudes of teachers,

*Abstract of article published in the August 1950 issue of the *Wisconsin Medical Journal*, by Gilbert J. Rich, M.D., Psychiatrist-Director, Roanoke, Virginia, Guidance Center

etc. All of these are likely to produce frustrations and to give rise to emotional difficulties.

It is possible at this time to mention only a few of the commoner behavior problems which are brought to the attention of physicians. Probably one of the most frequent is a refusal of the child to eat. When the child refuses to eat, he is accomplishing something that is of value to him. He gets the parent to urge him to eat and he thereby makes the parent show this symbol of his love. Of course, the refusal of food may mean other things, such as a means of gaining attention from the parents or a weapon to use against them. In any event, the value of not eating to the child is always a result of the parental attitude toward it. It is worth while for the child to refuse food only if the parent is thereby incited to some form of action, whether it be urging, anger, punishment, etc.

It must follow from this that treatment of the situation lies primarily in removing the taking of food (or the failure to do so) from the sphere of emotional expression. Inasmuch as the parents, by their response, have made the refusal useful to the child as a means of expressing his feelings, it must follow that this value of food can be eliminated if the parents will cease to be concerned as to whether the child eats or does not. Naturally, the physician may be faced with the problem of balancing the physical and the emotional needs of the child. He will have to ask himself whether the harm done by allowing the child to go without food, even to the extent of not eating at all for a few days, is greater or less than the good done by treating the behavior and abolishing it as a source of friction within the home. It is only the rare case in which the physical factors are so important that the parent cannot be advised to ignore whether the child eats or does not eat.

Another common behavior problem of children is the existence of temper tantrums. A temper tantrum has very much the same function in the child's emotional life as does refusal to eat. It is a means by which he or she can accomplish something that he wants, even if that something is no more than attaining the attention which the parent has to give when he spanks or otherwise punishes the child. In this connection, it should be noted that there is no justification for assuming that punishment always deters or that a child will always behave so as to avoid being punished. On the contrary, we see in child guidance clinics many children who actively seek punishment either as a vicarious solution for feelings of guilt or because they wish the attention of their elders to so great an extent that they would rather be punished than ignored. The cure of temper tantrums is as simple as that of refusal to eat. The significance of the temper tantrum is given to it by the parental reaction and when the parents stop responding the child is no longer able to accomplish what he desires. Occasionally, of course, we see a child who has temper tantrums because of excessive irritability which is on an organic basis. These cases are particularly marked by the impulsive nature of the child's outbursts, which often occur without any adequate reason. In such cases (and they are relatively rare), it might be well to look for a history of some illness which might have had encephalitic components and to either confirm or rule out their existence by means of an electroencephalographic tracing.

A much more difficult problem to deal with than any of the above is enuresis. One reason for this is that it is so closely interwoven with one of the major early frustrations of a child, that of toilet training. No doubt, we often fail to recognize the extent to which we are frustrating an infant when we cause him to give up the freedom of eliminating waste products when and as he pleases and require him to fit into the pattern which our culture sets. Toilet training illustrates the previously emphasized point that a child cannot safely be frustrated until he has developed to the point where he can tolerate that frustration. It would appear that the second year of life, that is, between the ages of 1 and 2, is the optimum time for developing daytime habits of elimination and that the third year of life is the optimum time for extending these habits throughout the night. Many children are trained before the age of 2 to be dry both day and night without any harm, but there would hardly seem to be any justification for calling the child enuretic because it wets the bed at the age of 2. It is only after the third birthday is past that it can be considered a serious problem. In addition, we must realize that bed-wetting, because it brings forth a reaction from the parents, can serve the child in the same ways as do temper tantrums or refusal to eat.

The handling of the enuretic child presents many difficulties. Certainly, the first thing to do is to mini-

mize the tensions within the home situation. This involves having the parents cease all shaming, punishments, and threats connected with enuresis. A second step is to arouse in the child not merely an interest in being dry, but a feeling of success. This can be accomplished by a regular program of awakening the child at night, arranging the time or times of awakening so that the child will be successful in keeping a dry bed. We wish to build self-confidence. It is my feeling that the time-honored treatment of eliminating the intake of fluid after 4 o'clock in the afternoon is at best only a weak supplement to other forms of treatment. It is very seldom that it effects a cure by itself.

The few problems mentioned here are merely examples of how children use their behavior to express themselves and to find outlets for their emotional problems. The situations involved are usually quite complicated, both because the child is subjected to a myriad of factors influencing his feelings and behavior and because he has many ways of self-expression. We should emphasize the importance of thinking of a child's behavior not in terms of what it means to the grown-ups in his environment, but rather in terms of the child's own needs and the ways he is using to satisfy them.

BOOK ANNOUNCEMENTS

Pars Pro Toto. Brevarium Medicum Internationale (Abbreviations in International Medical Literature Including Sister Sciences. By ALFRED PEYSER. Stockholm. Almqvist & Wiksell. 1950. 196 pages. Cloth.

The Physician Examines the Bible. By C. RAIMER SMITH, B.S., M.D., D.N.B. Philosophical Library, New York. 1950. vii-394 pages. Cloth. Price $4.75.

Sexual Fear. By EDWIN W. HIRSCH, B.S., M.D., Attending Urologist, Englewood Hospital, Chicago, Ill.; former Associate in Urology, College of Medicine, University of Illinois. Garden City Publishing Company, Inc., Garden City, N. Y. 1950. ix-307 pages. Cloth. Price $3.00.

Principles and Practice of Surgery. By JACOB K. BERMAN, A.B., M.D., F.A.C.S., Indianapolis, Indiana. Associate Professor of Surgery, Indiana University School of Medicine; Associate Professor of Oral Surgery, School of Dentistry; Chief Consultant in Surgery, Billing's VA Hospital, Ft. Benjamin Harrison; etc. St. Louis, The C. V. Mosby Company. 1950. XVI-1378 pages. With 429 Illustrations. Cloth. Price $15.00.

Principles of General Psychopathology. An Interpretation of the Theoretical Foundations of Psychopathological Concepts. By SIEGFRIED FISCHER, M.D., Clinical Instructor in Psychiatry, University of California. Philosophical Library, New York. 1950. xxi-327 pages. Cloth. Price $4.75.

Physical Examination in Health and Disease. By RUDOLPH H. KAMPMEIER, A.B., M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine; Chief of the Medical Outpatient Service, Vanderbilt University, Nashville, Tennessee. Philadelphia, F. A. Davis Company, 1950. xx-821 pages. With 550 Illustrations, 1 in Color. Cloth. Price $8.00.

Teaching the Retarded Child at Home. School at Home. Teaching the Handicapped Child Through Practical and Proven Methods. By EDNA DAVISON OSTERHOUT, B.A., Teacher of Handicapped Children at the Brett School, Dingman's Ferry, Pa. Duke University Press, Durham, N. C. 1950. x-67 pages. Paper.

Breast Deformities and Their Repair. By JACQUES W. MALINIAC, M.D., Clinical Professor of Plastic Reparative Surgery and Associate Attending Plastic Surgeon, New York Polyclinic Medical School and Hospital; Attending Plastic Surgeon, Sydenham Hospital, New York. Grune & Stratton, New York. 1950. ix-193 pages. Illustrated. Cloth. Price $10.00.

The author states on the wrapper that "the purpose of the book is to show the surgeon, gynecologist, and obstetrician, interested in mammaplastic surgery but without special experience in the field, which are the safe procedures available for correction of breast deformities, and to help him determine the proper method for each individual case." A careful reading of this book by the casual operator would probably serve to deter rather than encourage a venture into this field of surgery for the pitfalls are many and disappointments are inevitable.

A very good description of the blood supply to the breast is given. A knowledge of this is essential in any plastic procedure on the part, for most operations that come to grief do so as the result of postoperative circulatory deficiencies.

A remarkable number of different technics have been devised to correct hypertrophy of the breast. No less than 28 methods are described, all designed to offset nature's derelictions in this respect. The author describes in detail and makes out a good case for his own two-stage procedure.

The final chapters which are devoted to anomalies, gynecomastia, etc., are of considerable value. The book is well written and the photographs are uniformly good. The illustrations are abundant, which probably explains in part the considerable cost of this rather thin volume. H. J. W.

Sir William Osler. Aphorisms from His Bedside Teachings and Writings. Collected by ROBERT BENNETT BEAN, M.D. (1874-1944). Edited by William Bennett Bean, M.D. Henry Schuman, Inc., New York, 1950. 159 pages. Cloth. Price $2.50.

Sir William Osler died in 1919. His statue is still increasing. Last year, the 100th anniversary of his birth, was noticed by practically every medical magazine in this country and Great Britain. Some devoted a whole issue to commemorating his work. This attractive little collection of his aphorisms is therefore timely. They were collected by the late Dr. Robert Bennett Bean, who was professor of anatomy at the University of Virginia, and a former student of Sir William's. The aphorisms are classified according to subject matter under six headings; the medical student, the ethos, the patient, the great republic of medicine, epitomes, and epitaph. Every student of medicine would do well to keep this little volume at his bedside so as to absorb its wisdom. No. 107 is a good sample. "From the day you begin practice never under any circumstances listen to a tale told to the detriment of a brother practitioner. And when any dispute or trouble does arise, go frankly, ere sunset, and talk the matter over, in which way you may gain a brother and a friend."

M. P. R.

The Merck Manual of Diagnosis and Therapy. A Source of Ready Reference for the Physician. Eighth Edition. Merck & Company, Inc., Rahway, N. J. 1950. 1592 pages. Cloth. Price—Regular Edition, $4.50; Thumb-Index Edition, $5.00.

The seventh edition was published in 1940 so that a new edition of this well-known manual is welcome. Diseases are now arranged according to systems rather than the alphabetical individual listings in the previous edition. Prescriptions are in English replacing Latin ones and are grouped in categories. A list of proprietary compounds alternative to those mentioned in the text is useful. It is doubtful that there is a better small book for a quick survey of standard therapeutic procedures.

M. E. B. O., JR.

Psychiatric Sections in General Hospitals. By PAUL HAUN, M.D., MED. SC. D., Assistant Professor of Psychiatry, Georgetown University Medical School. An Architectural Record Book. F. W. Dodge Corporation, New York. 1950. 80 pages. Cloth. Price $4.00.

In an introduction to this monograph, Dr. Karl Menninger states, "It is no longer possible to shut our eyes to the fact that most of the people who need hospital care are not properly provided for in the type of hospital and hospital service which now exist." Taking this fact as a keynote, Dr. Paul Haun has endeavored to point out the existing lack of proper facilities, as well as give the necessary points and plans to be considered in the proper establishment and functioning of psychiatric sections in general hospitals. It is not the purpose of this review to abstract the book which Dr. Haun has so excellently written; it is sufficient to state that he has considered the patients' needs and problems in every aspect. The use of unobtrusive security features, proper interview and examination rooms, solarium, and nurses' stations are discussed in detail.

One point illustrated by Dr. Haun is the importance of a psychiatric section in a general hospital. He expresses the view that there is much less stigma attached to psychiatric hospitalization when it is obtained in a general hospital. He also feels that the prompt availability of internists and surgeons is a factor strongly in favor of this type of psychiatric unit.

Also included in the book are eight floor plans with ratings as to their operability. Six more floor plans are presented as proposed by Charles Butler and Addison Erdman.

While it is felt that the plans included with the grading "A" are good and workable plans, attention must be called to the fact that no mention is made of the four wing, "cross" type with central lobby. This has been found to be a most satisfactory type of floor plan, mainly because of the workability of isolating the more disturbed patients, while still maintaining them under the prompt supervision of the general psychiatric nursing staff.

R. F. G., JR.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

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The Auxiliary Pledge

I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation, and ever sustain its high ideals.

The White House Conference, December 3-7, in Washington

The Auxiliary to the American Medical Association will be represented at the mid-century White House Conference. This is the fifth of its kind. The first was held in 1909 and resulted in the creation of the Children's Bureau. The second, held in 1919, led to the passage of the Child Labor Law. The third, in 1930, produced the now famous "Children's Charter", and the 1940 conference, although handicapped by the war, nevertheless resulted in the establishment of several state and community services for children.

Dr. D. A. Dukelow of the A.M.A. Bureau of Health Education has been assigned to the staff of experts to help design permanent programs for improving the mental and physical health of children.

In addition to the A.M.A., hundreds of professional, voluntary and official organizations, with memberships that cross-section the entire population, are working on the conference. They are examining the environment in which children are growing up, studying ways in which it can be improved, and later will make recommendations for action programs in which both children and adults can participate.

Keep the Public Informed

All over our State, Auxiliary members have demonstrated their ability to get the facts before the public, to awaken public interest, and to stimulate discussion of proposed medical legislation which would affect the health and welfare of every American. As we work together this year to further our Public Relations Program, please let's have an exchange of ideas by sending your plans to Mrs. J. W. Carney for publication here.

"Whether we shall continue to live in a free America or a Socialistic America may depend more upon individual efforts than we realize. We must stand united behind American Medicine and all that it represents. Our responsibilities to each other and to the American people are now greater than ever before."

Mrs. David Allman

The President's Message

We began our 28th year of Auxiliary work together with a great feeling of pride in what we have been able to accomplish. The scope of our work has widened in many directions. The work which we carry on through our chairmen should be expanded wherever feasible. We must never forget the influence which we as physicians' wives weild in our community for greater understanding among our profession as well as the public at large. May we continue to carry out the ideals of the founders of our organization.

We must never be satisfied with our accomplish-

ments; if we do, then we shall cease to grow and to be of service.

Please know that I am always open to your suggestions and you may be assured that they will be most happily received and deeply considered.

May God bless each one of you as we go forward this year together.

Mary Ann McCoy

Chicago Conference

Virginia was represented at the Chicago Conference, held November 2-3, by Mrs. Herman W. Farber and Mrs. C. M. McCoy.

The theme of the meeting was "Public Service Through Education". Dr. Cline, president-elect of the A.M.A., spoke to us and said we may win in the next two years but he warned us to beware of complacency or inertia. We, auxiliary, really do the work and carry the ball for the doctors.

Mrs. David Allman, as chairman of arrangements for the annual meeting, June 11-15, at Atlantic City, gave her plans for our sessions.

We were told that "we, who are so well prepared to educate the public in the ways of health, must take the lead, because if we don't others will. Let us be charged with the zeal to carry on, realizing that we are the right arm of the A.M.A."

Mrs. Leo J. Schaefer, National organization chairman, said there were 90,000 doctors' wives not members of the auxiliary. At present, we have 53,592 members. There are 2,005 medical societies and 1,037 auxiliaries. We were urged to make every doctor's wife an auxiliary member with many suggestions given us as to how to accomplish this.

All but four states had representation at this meeting. The exchange of ideas was most helpful.

The program was carried out in the form of four panels with the president of each state assigned to one of these. The panels were organization, public relations, program and "Today's Health". Virginia's topic was "Today's Health in the Physician's Office".

Auxiliary Reports.

Warwick

At the first Fall meeting on September the 27th, with luncheon at Hotel Warwick in Newport News, Mrs. Chester Bradley, a past president, installed officers for the coming year. Mrs. Louis Richman, president; Mrs. William A. Read, vice-president, both for a second term. Others taking office were: Mrs. J. W. Carney, treasurer; Mrs. O. Watts Booth, recording secretary; and Mrs. Charles Gandek, historian.

Committee chairmen are as follows: Ways and Means, Mrs. William A. Read; Membership, Mrs. Herbert Neisser; Legislative, Mrs. Thomas N. Hunnicutt; Nurse Recruitment and Lucille Hunnicutt Jones Award, Mrs. Murray A. Dick and Mrs. Thomas Lawford; Rolling Library, Mrs. Guy Amory; Program, Mrs. I. Floyd Nesbitt; Publicity, Mrs. Vincent E. Lascara; Today's Health, Mrs. Melvin L. Horne; Cancer Control, Mrs. Russell Buxton and Mrs. Barnes Gillespie; Bulletin, Mrs. Bradley; and Community Health Council, Mrs. Lawford.

Plans were discussed for the Bazaar to be given in December at Riverside Hospital.

On September 12th, the Auxiliary was hostess at their annual party honoring to incoming classes of student nurses at Riverside and Buxton Hospitals. The entertainment was in the form of an outing and a picnic at Mariner's Museum and approximately seventy-nine attended.

Josephine L. Lascara
(Mrs. V. L.)

Danville-Pittsylvania

The proposed plans for the coming year's work and various committee reports were highlights of the business luncheon meeting held October the 19th at the Country Club. The new president, Mrs. John L. Clare presided. The following slate of officers will assist her in the year's work: President-elect, Mrs. Henry Bourne; vice-president, Mrs. C. A. Easley; recording secretary, Mrs. H. J. Langston; corresponding secretary, Mrs. D. L. Arey; treasurer, Mrs. Prentice Kinser.

Chairmen of the principal committees include Mrs. M. H. McClintic for Ways and Means; Mrs. L. O. Crumpler, program; Mrs. W. E. Dickerson, social; Mrs. F. H. McGovern, parliamentarian; Mrs. J. L. Eggleston, philanthropic.

A summary of the recent State Medical convention in Roanoke was given by the delegates, Mrs. Easley and Mrs. Langston.

Sarah W. Pritchett
(Mrs. Drake)
Publicity Chairman

EDITORIAL

Wade Hampton Frost (1880-1938)

REED, Ross and Gorgas practiced epidemiology, but as a discipline epidemiology did not exist at the time. It was not taught in any university. The man who put epidemiology in the curriculum of Hygiene and Public Health Schools was Wade Hampton Frost.

Frost was born in Marshall, Virginia, March 3, 1880, the seventh of eight children. His father was a physician who moved to Virginia from Charleston, South Carolina, just after the Civil War. His mother, Sabra J. (Walker) Frost, was a cultured and gifted woman who had great influence in his early education. He was raised in a cultured, as well as a medical, atmosphere. His grandfather, his father and an older brother, had studied medicine. According to "Who was Who" his more formal education was received at Randolph-Macon College (1896-97) and at the University of Virginia where he received his A.B. degree in 1901 and his M.D. in 1903. At Randolph-Macon he joined the K. A. fraternity and Phi Beta Kappa. Like so many of the graduates in medicine at the University of Virginia at the time, he went to Bellevue in New York for his clinical training. He also served a year as interne at St. Vincent's Hospital in Norfolk. Again, following the traditional course of so many Virginia graduates, he tried out the examinations for a Federal appointment. He accepted a commission in the Public Health and Marine Hospital Service, and in February 1905, was assigned to duty at the Marine Hospital in Baltimore.

The turning point in his career came in 1908 when he was assigned to duty at the Hygienic Laboratory, then under the direction of M. J. Rosenau. Here he came in contact with a group of enthusiastic Public Health investigators: John F. Anderson, Joseph Goldberger, L. L. Lumsden, J. H. Kastle, C. H. Lavinder, Edward Francis and Reid Hunt. Here he mastered the technic of Public Health Laboratory procedures, especially those used in investigation of stream pollution. He was assigned to routine examination of Potomac River water in relation to the typhoid problem in Washington. In 1913 Congress created the authority and provided the funds for a study of stream pollution and water purification. A laboratory and administration office was set up in Cincinnati. Frost was put in charge of the project. He had a large staff of physicians, engineers, chemists, a microbiologist and a bacteriologist working on the problem. It was Frost's responsibility to organize and correlate these studies. This work was interrupted by our entry into World War I. Frost was then detailed to the American Red Cross to organize the Bureau of Sanitary Service. In a short time he developed tuberculosis necessitating a stay of six months in a sanatorium in North Carolina and another six months of light duty. Upon his return to active duty he was assigned to a statistical and epidemiological study of influenza in collaboration with Edgar Sydenstricker, from whom he learned much about statistical methods. Frost was now a well rounded epidemiologist.

In 1919, when the Johns Hopkins School of Hygiene and Public Health was established, Dr. Welch, its first Director, appointed Wade Frost Resident Lecturer in Epidemiology and in 1921 he became Professor. He was Dean of the Faculty in the School of Hygiene and Public Health, 1931-34, succeeding Dr. William H. Howell.

Besides being a pathfinder in teaching epidemiology, Frost is remembered for his work on water supplies and the epidemiology of influenza, poliomyelitis and tuber-

culosis. He was noted for the accuracy and clarity of his writing and the charm of his personality.

This is the 18th of a series "Doctors for whom the public should be thankful."

The Roanoke Meeting

ROANOKE doctors are wonderful hosts and the Medical Society of Virginia loves to meet in their hospitable city. In the past our meetings there have always been successful and the meeting this year was no exception. Six hundred and eighteen doctors, 186 ladies and 123 exhibitors registered. Five hundred and seventy-four attended the banquet. All available space was taken up with scientific and commercial exhibits and they attracted a lot of attention. They were certainly attractive.

Among the scientific exhibits the first prize was awarded to Dr. John Devine and his group in Lynchburg, for their exhibit on carcinoma of the stomach and pancreas. The second prize went to Dr. William R. Sandusky of the University of Virginia for his work on antibodies in experimental gas gangrene. Dr. Lee Sutton of the Medical College of Virginia was given the third prize for his work on poliomyelitis. We were interested to note that the mortality at the Medical College of Virginia Hospitals was 0.84 per cent in the present epidemic as contrasted with 8.7 per cent for the State as a whole. While there is no specific cure for poliomyelitis, these figures show that much can be done to save life by good medical and nursing care. The scientific papers were well presented and well discussed. One essayist was sick and could not come to the meeting; all others on the program were present. So much for the statistics of the meeting.

In other respects, this was no ordinary meeting. The House of Delegates had its hands full. It discussed (1) the draft, (2) compulsory health insurance, (3) the A.M.A. dues, (4) Negro membership and (5) civilian defense. There was a general feeling that the present situation was not just a temporary emergency, but one that would likely last for years and to meet it successfully would require long range planning.

There is still a great deal of confusion about the draft of doctors, dentists, veterinarians, opticians and osteopaths. The recent graduates in medicine, we were told, all want the draft. They have not volunteered because many have families. An added complication is that many are under contracts as residents in hospitals. The draft is the simplest way out for them. Most of the doctors discussing the question looked on service with the armed forces as an obligation to be gotten over with as quickly as possible. Concern for the good of the fighting man seemingly did not enter into the question. For instance, many doctors advocated that service in the line before a man had studied medicine should count as much in the way of priorities and length of enlistments as service in the Medical Corps.

Virginia is near the bottom of the States in the payment of the A. M. A. dues. To date only 35 per cent of the members of the Medical Society of Virginia have paid up. In some States, notably, California and Pennsylvania, over 90 per cent have paid. It is not believed that this reflects any lack of loyalty to the A. M. A. on the part of Virginia doctors but is largely due to the confusion that has existed as to the method of collection. Last year the payment of twenty-five dollars was a voluntary matter and 67 per cent paid the assessment. This year it is obligatory and membership in the A. M. A.

is contingent upon the payment of the twenty-five dollar dues. Since our representation in the House of Delegates of the A. M. A. is based upon the number of our members, unless there is a great improvement in the matter of A. M. A. dues our representation will most certainly be reduced. The local component Societies should collect this money and send it on to the State Society office without further delay.

The elimination of the word "white" from the constitution so that Negro physicians who are acceptable to component local Societies can become members of the Medical Society of Virginia and in turn, the American Medical Association, was extensively discussed. Unfortunately, the issue was somewhat confused by the fact that the Committee to confer with the Old Dominion Medical Society did not publish the proposed change in the MONTHLY but sent out a written notice to the membership. When the question came to a final vote it lacked five votes of having the required two-thirds majority.

The problem of civilian defense was discussed by Col. William L. Wilson, Special Assistant to the Surgeon General. The key to the successful solution is cooperation. There must be careful planning to insure quick flow of personnel and material from nearby areas in case of disaster. The Medical Society has a strong Committee to head up this new activity.

At the public session on Monday evening compulsory health insurance was fully discussed. Dr. Caudill delivered the best presidential address we have heard. He showed why socialized medicine has not worked elsewhere and why it cannot be expected to work for the benefit of either the public or the profession. Senator Byrd, the guest speaker of the evening, was so impressed with Dr. Caudill's speech that he is going to have it published in the Congressional Record. Senator Byrd was in rare form. America is great, he said, because of the American way of doing things. This is true for medicine as well as industry. This country cannot carry the world on its shoulders and socialism on its back and survive.

At the banquet on Tuesday evening, Mr. Sokolsky reinforced what Dr. W. C. Caudill and Senator Byrd had said against President Truman's health program, approaching it from a third angle, that of a news commentator. His theme was the Asiatic situation, and the need of America to keep strong. He said the Korean crisis had its beginning at Cairo in 1943 when Roosevelt and Churchill promised Chiang Kai-shek and Mme. Chiang Kai-shek to restore to the original owners all the land that the Japanese had taken. Four days later, the same two at Teheran promised the same land to Russia. Mr. Sokolsky gave a good picture of the Russian mind. They hold to Marxist principles and work for its spread over the world with the enthusiasm of religious fanatics. They recognize that the United States is the only obstacle between them and their goal. Whether they win victories or not is immaterial, so long as they wear down this country's will to resist. They can take their time, twenty-five years if necessary, to weaken this country by boring from within and by external wars. That is why it is so important to stop *now* the present drift towards socialism in this country.

We were particularly fortunate in our guest speakers. Besides Senator Byrd, Col. Wilson and Mr. Sokolsky, there were Dr. Franklin D. Murphy of Kansas City and Dr. George T. Pack of New York City.

Dr. Murphy spoke on Post-graduate Education of the Practicing Physician, a field in which he has made for himself an international reputation. He visualizes the life of the doctor as forty years of continuing education and in Kansas he has implemented such a plan with refresher and post-graduate courses for Kansas doctors. Some of these post-graduate courses provide what he calls "laying-on-of-hands" type of instruc-

tion. We were interested in hearing him say that internships in small general hospitals were of more value to the prospective general practitioner than an internship in a teaching hospital.

The morning of the last day was devoted to a symposium on Progress in Medicine. Dr. Pack discussed Cancer of the colon and rectum, Dr. William Parson, ACTH and Cortisone and the Treatment of Various Diseases, and Dr. Russell L. Haden, the Treatment of Arthritis. These speakers and their subjects evidently appealed to our membership for the attendance was excellent to the very end.

The World Medical Editors Association

THE first meeting of the World Medical Editors was held October 21st at the Roosevelt Hotel, New York, following the Fourth General Assembly of the World Medical Association. There was an excellent attendance, especially from Cuba, Central and South America and one editor came from Cape Town. Dr. Morris Fishbein presided. Many problems of medical editors were discussed. Dr. Hugh Clegg, editor of the *British Medical Journal,* discussed the question of whether book reviews and editorials or leading articles, as the British call them, should be signed. He presented arguments on both sides of the question. Personally, he favored the signed article. Mr. Walter Kahoe of Lippincott's, on the other hand, favored the anonymous article. He said that a good book review was one that gave the prospective buyer an accurate idea of what was in the book. That there was a "typographical error on page 72" was unimportant.

Dr. M. W. Woerdeman, Editor-in-Chief of *Excerpta Medica,* could not be present so his paper on abstracting was presented in brief by Dr. Fishbein, and was discussed by Dr. George Kosmak. Dr. Clegg, who is chairman of a committee of UNESCO that is studying this problem, said that his committee is attempting to have adopted uniform abbreviations for names of medical journals and also common medical terms.

Stanley Weld, of the *Connecticut State Medical Journal,* gave an excellent history of the development of advertising in medical magazines. In this connection, Austin Smith gave an account of the Council on Therapy and Drugs of the A. M. A. He said that the purpose of the National Pure Food and Drug Act was to protect the self-medicator against being poisoned, whereas the Council was concerned not only with the safety, but also with the efficiency of the remedy.

Dr. Garland, editor of the *New England Journal of Medicine,* spoke on the significance of editorial policy. He divided editorials into two classes, medical and others. The editors of State Medical Journals have an important function, and anything that is interesting to doctors is a proper subject for an editorial. Dr. McDermott, of the *Canadian Medical Association Journal,* brought up the subject of indexing editorials. Dr. Fishbein said that it was the policy of the *Cumulative Index Medicus* to index outstanding editorials, but it had difficulty indexing them for the title so frequently failed to indicate what the editorial was about.

At the luncheon, Dr. Larky read an excellent paper on the practical problems of indexing and abstracting. He took as a base line the paper that John Shaw Billings read at the International Congress in London in 1880, when Billings was just starting the *Index Medicus* and the *Index Catalogue of the Surgeon- General's Library.* At that time the problem was enormous but now the number of journals has increased so tremendously that it would be practically impossible were it not for mechanical aids. These have been greatly improved recently, and it is hoped that indexing can be kept current.

The next meeting of the Association will probably be held in Stockholm.

The Cockroach Role in Food Poisoning

THE common cockroach has long been looked on with suspicion as a carrier of pathogenic organisms, especially those of the intestinal group. They seem by nature ideally suited for this purpose. Their flat bodies enable them to gain entrance to almost any kind of food container. Their insatiable appetites cause them to overeat and, when over distended, they readily regurgitate their food. Thus they may contaminate food by vomitus, feces, and body contact.

Workers in the School of Public Health of the University of Minnesota (Theodore A. Olson and Myrtle E. Rueger, Experimental transmission of Salmonella oranienburg through cockroaches, *Public Health Reports* 65:531, 1950) have carried an elaborate experiment to determine if cockroaches can carry infectious bacteria in their intestinal tract. They used four varieties of cockroaches, and the Salmonella oranienburg as the test organism. The problem is not so simple as it sounds. It took them five years to learn how to raise the cockroaches in the laboratory and the best means of anesthetizing them and of tying them up to prevent them from contaminating their wings and legs. If the body of a cockroach becomes contaminated, the organism remained viable for 78 days in ordinary atmospheric conditions. They were able to prove that after an infected feeding the fecal pellet contained the organism for 10 to 20 days, and even after the organism disappeared from the feces they could be demonstrated in the intestinal tract. The Salmonella oranienburg will survive in such excrement for 199 days at a relative humidity of 31 per cent and 85 days at 52-56 per cent. It can survive on glass surfaces for 34 days, on corn flakes at least 62 days, and on crackers at least 88 days.

The authors point out, however, "That until the actual incidence of infection in wild cockroaches is determined on the basis of a large number of specimens and for a large number of geographical areas, and until this information is integrated with definite epidemiological evidence, the roach can be regarded only with grave suspicion." In spite of lack of such evidence, we had rather see a tramp in our kitchen than a cockroach.

PRESIDENT'S MESSAGE

Have you paid your A. M. A. dues for 1950? If not, send in your check for $25 immediately to the Treasurer of your local Society or to Mr. Henry S. Johnson, secretary-treasurer of the State Society, and mark on the check: A. M. A. dues for 1950. This should be done so it will not be confused with assessments for 1949. If the dues are not paid by December 31, 1950, you will be dropped as a member of the American Medical Association; this is the rule which was passed last year and there is nothing that the State Society can do about it.

We have 2,205 members, which entitles us to three delegates to the A. M. A. meeting in June, 1951; these delegates were elected at our recent meeting in Roanoke. If we do not have over 2,000 members paid up by the thirty-first of December, 1950, we stand to lose one, if not two delegates.

It will be quite embarrassing for our delegates to go to the A. M. A. meeting and find they have been unseated. PLEASE ATTEND TO THIS TODAY!

Organized medicine, through the channels of the A. M. A., has done, and is doing, a wonderful job through the publication of its many journals in helping to develop scientific medicine throughout the entire world. It is also putting up a brisk fight against socialized medicine. These cannot be continued without sufficient funds.

C. L. HARRELL, M.D.

SOCIETY PROCEEDINGS

Warwick County Medical Society.

Dr. Joseph L. Hollander, chief of the Arthritis Section at the University of Pennsylvania, was guest speaker at the regular meeting of this society on the evening of October the 24th at the James River Country Club. His subject was "The Present Status of ACTH and Cortisone", on which he gave a most instructive talk. At the business session, Dr. J. W. Massey, Jr., and Dr. J. W. Choate were elected to membership.

Dr. George S. Grier and Dr. J. W. Carney, both of Newport News, are president and secretary, respectively of the society.

The Roanoke Academy of Medicine

Held its November meeting on the 6th at Hotel Roanoke, under the presidency of Dr. E. G. Gill. Dr. S. F. Driver is secretary.

The scientific program included:

Case Report of Ovarian Cyst—Dr. Walter Johnson

Leukemia in Children—Dr. Paul Forth

Influence of Glucose Metabolism on Stomach Function—Dr. William Poe

Surgical Treatment of Hypertension—Dr. William Tice

A buffet dinner followed the scientific session.

The Northern Neck Medical Society

Held its regular Fall meeting at Kilmarnock, at which time the following officers were elected for the coming year: President, Dr. Lee S. Liggan, Irvington; vice-president, Dr. Richard T. Arnest, Warsaw; and secretary-treasurer, Dr. Paul C. Pearson (reelected), Warsaw.

NEWS

Committee of Arrangements

For the 1951 annual meeting of the Medical Society of Virginia at Virginia Beach have been named as follows:

General Chairman	Dr. Walter P. Adams
Assistant General Chairman	Dr. Ira L. Hancock
Hotels and Halls	Dr. H. Floyd Dormire Dr. James W. Todd
Technical Exhibits	Dr. George A. Duncan
Scientific Exhibits	Dr. Eugene L. Lowenberg
Entertainment	Dr. Southgate Leigh, Jr.
Golf	Dr. C. M. McCoy
Publicity and Press	Dr. Albert V. Crosby

Special Virginia Society Meetings.

Virginia State Section of the American College of Physicians

The Section held a Luncheon-Business meeting in Roanoke, Tuesday, October 10, during the three days meeting of the Medical Society of Virginia, from October the 8th to the 11th.

The annual election of Officers for the Section was held at this time and Dr. C. D. Nofsinger of Roanoke was elected Chairman and Dr. James F. Waddill, of Norfolk, was reelected Secretary-Treasurer.

It was decided that the Winter Scientific meeting would be held in Roanoke in 1951 at some time during the latter part of February. General information concerning this meeting will be sent out at a later date by the local Program Committee

Virginia Academy of General Practice

The Academy held its annual meeting at the time of the State meeting, and the following officers were elected for the ensuing year: President, Dr. Ira L. Hancock, Creeds; president-elect, Dr. John O. Boyd, Jr., Roanoke; vice-president, Dr. Floyd Hobbs, Alexandria; secretary, Dr. Edward E. Haddock, Richmond; treasurer, Dr. C. R. Titus, Bedford. The following constitute the Board of Directors: Drs. N. D. Nelms of Hampton, W. D. Ozlin of South Hill and Harold Miller of Woodstock through 1951; Drs. J. C. Coulter of Charlottesville, B. A. Hopkins of Stuart, and H. W. Rogers of Norfolk through 1952; and Drs. Rufus Brittain of Tazewell, John Davis of Lynchburg; and W. R. Morton of Richmond through 1953, with Dr. J. D. Hagood of Clover ex-officio.

The Clinical Society of the Virginia Diabetes Association

The second meeting of this Society was held in Roanoke on October 8th at 3:00 p.m., at which time

papers were presented by Dr. William A. Read of Newport News, Dr. Edward D. Levy of Norfolk, Dr. Robert Crawford of Roanoke, Dr. Richard Neubauer of Richmond, and Dr. Ernest G. Scott of Lynchburg. The increase in members indicated a growing interest in the Society and its work.

Officers elected for the ensuing year are: President, Dr. Walter P. Adams, Norfolk; vice-presidents, Drs. Snowden C. Hall, Jr., Danville, and Collins D. Nofsinger, Roanoke; and secretary-treasurer, Dr. Robert L. Bailey (re-elected), Richmond.

The Society has been granted affiliate status with the American Diabetes Association. During the coming year the members will take part in Diabetes Detection work.

VIRGINIA OBSTETRICAL AND GYNECOLOGICAL SOCIETY

This Society held its fall meeting October 10, at the Hotel Patrick Henry, Roanoke. Guest speaker was Dr. F. Sidney Dunne, Philadelphia, Pennsylvania, on "Carcinoma of the Endometrium". Thirty-one members and three guests were present. New officers elected were: Dr. John M. Nokes, Charlottesville, President; Dr. Henry C. Spalding, Richmond, President-Elect; Dr. Chester D. Bradley, Newport News, Secretary-Treasurer.

The following physicians were elected to membership in the society: Dr. John L. Clare, Danville; Dr. William H. Cox, Richmond; Dr. William L. Davis, Newport News; Dr. Alfred R. Garrett, Norfolk; Dr. John F. Gayle, Hampton; Dr. William H. Rogers, Suffolk.

VIRGINIA ORTHOPEDIC SOCIETY

The new officers of this Society elected at its meeting in Roanoke in October are: President, Dr. Charles Frankel, Charlottesville; vice-president, Dr. C. E. Keefer, Lynchburg; and secretary-treasurer, Dr. Allen M. Ferry (re-elected), Arlington. Dr. Ham Allen of the University of Virginia was elected to full membership. The members held a discussion of cerebro-spastic palsy problem in State of Virginia and polio respirator center.

VIRGINIA PEDIATRIC SOCIETY

At the meeting of this Society in Roanoke, Dr. E. Berkeley Neal of Roanoke was named president for the ensuing year; Dr. E. L. Kendig, Jr., Richmond, vice-president; and Dr. W. A. Mitchell, Newport News, secretary-treasurer. New members of the Executive Board are Dr. F. Read Hopkins of Lynchburg and Dr. J. O. Rydeen of Norfolk.

Dr. W. Vernon Lippard, dean of the University of Virginia Medical School, was elected to honorary membership.

VIRGINIA UROLOGICAL SOCIETY

At the annual election of officers of this Society on October the 11th in Roanoke, the following were elected: President, Dr. Robert C. Bunts, Richmond; vice-president, Dr. Roy Upchurch, Danville; and Dr. Warren W. Koontz, Lynchburg, was re-elected secretary-treasurer.

A committee has been appointed to bring about a union of the Virginia and West Virginia Urological Societies and the American Urological Association will be petitioned to make this a branch of the Mid-Atlantic Section.

VIRGINIA SOCIETY OF ANESTHESIOLOGISTS

On October the 10th, Dr. C. R. Stephen, associate professor of Anesthesiology at Duke University Medical School, Durham, N. C., addressed the luncheon meeting at Hotel Roanoke, on the subject "Clinical Applications of the Oximeter in Anesthesia". Dr. Thomas Walker of Richmond is president and Dr. Harold F. Chase, Charlottesville, secretary of this Society.

Charles R. Robins Memorial Lecture.

On November the 10, the second of these lectures was held at the Baruch Auditorium of the Medical College of Virginia. Dr. Conrad G. Collins, professor of gynecology and obstetrics at Tulane University Medical School was the speaker, his subject being "Ligation of the Inferior Vena Cava".

The Charles R. Robins lectureship was established last year by Dr. Spotswood Robins and Dr. Charles R. Robins, Jr., in honor of their father, Dr. Charles R. Robins, one of the founders of Stuart Circle Hospital, this city, and a nationally known gynecologist.

Jefferson Medical College.

The Board of Trustees have accepted with regret the resignation of Dr. Wm. Harvey Perkins as Dean of that college, due to the condition of his health. He will, however, continue his position on the faculty as professor of Preventive Medicine and head of the Department.

Dr. George Allen Bennett, professor of Anatomy

and Director of the Daniel Baugh Institute of Anatomy has been appointed as Dr. Perkins' successor.

State Health Department News.

Dr. John P. Ruppe assumed his duties as Health Officer of the Alleghany-Botetourt Health District effective October 30.

Dr. W. D. Anderson, Health Officer of the Russell-Wise Health District, died on October 25.

Dr. Cooper Honored.

Dr. George Cooper, Jr., Charlottesville, was the recipient this year of the J. Shelton Horsley award of the Virginia Division, American Cancer Society, as the Virginian who had made the outstanding contribution during the year to the control of cancer. Dr. Cooper is now medical and scientific advisor of the Virginia Division and is also a trustee of the National society.

The First Annual Clinical Conference

Of the Gill Memorial Eye, Ear and Throat Hospital for former residents was held at the hospital in Roanoke, September 18.

The following doctors presented papers:

Dr. W. J. Judy, East Rainelle, W. Va.—"Refraction"

Dr. R. M. Ferrell, Lewisburg, W. Va.—"Management of Crossed Eyes"

Dr. F. Buerk Zimmerman, Louisville, Ky.—"Technique for Removing an Eye"

Dr. R. E. Smith, Mount Airy, N. C.—"Case Report"

Dr. Keith Gerchow, Morgantown, W. Va.—"Case Report"

Surgical demonstrations were given by the Staff of the Hospital.

The following officers were elected for the year: President, Dr. F. Buerk Zimmerman, Louisville; Vice-Presidents, Dr. Keith Gerchow, Morgantown, W. Va., and Dr. R. M. Ferrell, Lewisburg, W. Va.; Secretary-Treasurer, Dr. Houston L. Bell, Roanoke.

The next meeting will be held the last week in September, 1951.

Dr. Fred J. Wampler,

Formerly of Richmond and Luray, who for a little more than two years has been in Lima, Peru with the Institute of Inter-American Affairs, has been transferred to Paraguay as Chief of the Health and Sanitation Mission. He is at Asuncion, Paraguay.

A Correction.

Dr. Robert H. Sease, co-author of a paper on "Bromide Intoxication" published in the August *Monthly*, writes us under date of October 17 as follows:

'In a paper entitled "Bromide Intoxication", published by me in the August 1950 issue of the *Virginia Medical Monthly*, the statement was made that "Goody's Headache Powders contained Bromides.

"It has been brought to my attention that this was not true at the time of the publication.

"I would appreciate if you would permit me to correct this error by publishing the enclosed statement."

"Robert H. Sease, M.D."

American College of Surgeons.

At the annual meeting of the Governors and Fellows of the College in Boston October 26, the following officers were elected for the term 1951-1952: President-elect, Dr. Alton Ochsner, New Orleans; vice-presidents, Dr. Thomas H. Lanman, Boston, and Dr. Joel W. Baker, Seattle. These officers will be installed at the 1951 Clinical Congress in San Francisco.

Dr. Alfred P. Jones of Roanoke was among those elected to the Board of Governors for a three-year term expiring in 1953.

At the convocation, 978 initiates were received into fellowship and five honorary fellowships were conferred. Virginia doctors included in the initiates are:

Dr. Lloyd B. Burk, Jr., Arlington
Dr. Monford D. Custer, Jr., Winchester
Dr. John Ferguson Gayle, Hampton
Dr. Kurt Kirsch, Franklin
Dr. Juan de D. Martinez-G, Charlottesville
Dr. Joseph Corbin Parker, Richmond
Dr. Hugo Anthony Sacchet, Clifton Forge
Dr. Claude P. Sherman, Martinsville
Dr. James L. Thomson, Norfolk
Dr. William Rush Whitman, Jr., Roanoke

It has been announced that the Sectional meeting of the College in which is included Virginia will be held February 26 and 27 at Hot Springs, Virginia.

News from the University of Virginia Department of Medicine.

Dr. Edwin Boyle has been awarded a postdoctoral fellowship by the National Institute of Health for

studies on the ultracentrifugal analysis of the blood in patients with atherosclerosis under the direction of Dr. William Parson, Professor of Medicine, and Dr. Jesse Beams, Professor of Physics.

Dr. Walter O. Klingman, Associate Professor of Neurology and Psychiatry, has been appointed a member of the Board of Chief Consultants to the Medical Director of the Veterans Administration, representing the field of Neurology.

Two series of twelve weekly lectures for students and faculty have been arranged for the current academic year. Guest lecturers participating in the fall series are: Dr. Allen O. Whipple, Clinical Director of the Memorial Hospital; Col. John R. Wood, Chairman, Medical Research and Development Board, U. S. Army; Dr. DeWitt Stetten, Jr., Chief, Division of Nutrition and Physiology, The Public Health Research Institute of New York; Dr. Hudson Hoagland, Executive Director, The Worcester Foundation for Experimental Biology; Dr. Earl T. Engle, Professor of Anatomy, Columbia University; Dr. C. P. Rhoads, Director, Memorial Hospital and Sloan-Kettering Institute for Cancer Research; Dr. W. C. Hueper, Cancer Control Branch, U. S. Public Health Service; Dr. Shields Warren, Director, Division of Biology and Medicine, U. S. Atomic Energy Commission; Dr. Chester Jones, Attending Physician, Massachusetts General Hospital; Dr. Joseph E. Moore, Associate Professor of Medicine, The Johns Hopkins School of Medicine; Dr. John H. Gibbon, Jr., Director of Surgical Research, The Jefferson Medical College.

Dr. Palmer's lecture, "The Rationale of Current Therapy for Esseential Hypertension", is the first annual Staige D. Blackford Memorial Lecture, established in memory of the late Dr. Blackford by his friends and colleagues. Other lectures in the series are financed by the University, Alpha Omega Alpha and Phi Beta Pi.

Dr. Joseph F. A. McManus, Associate Professor of Pathology, has been awarded a grant by the National Institute of Health for histochemical studies on inflammation and repair.

The Children's Service Center, established in 1948 as a child guidance clinic under the direction of Dr. Frank J. Curran, associate professor of neurology and psychiatry, has moved from the University Hospital to larger quarters in the neighborhood. The Center has a staff of ten and is providing a useful service to the community as well as in the instruction of medical students.

Dr. Vernon W. Lippard, dean, and Dr. Henry B. Mulholland, assistant dean of the Department of Medicine, attended the meetings of the Association of American Medical Colleges at Lake Placid, N. Y. on October 23-25. Dr. Lippard was chairman of a panel discussion on faculty recruitment problems and spoke at a symposium on medical education in Europe. He was also reelected a member of the Executive Council of the Association.

Dr. William Parson, professor of medicine, attended the meeting of the Chicago Medical Society on November 2nd, and spoke on the following subjects: "Metabolic Bone Disease Associated with Renal Impairment"; "Heart Disease and Thyroid Function". He was also one of the guest speakers at a meeting of the Nashville Postgraduate Medical Assembly on October 4th, where he spoke on "The Psychological Effects of Eating Habits."

Dr. Alfred Chanutin, professor of biochemistry, participated in the program at the meeting of the American College of Physicians, held at Duke University on October 10th and 11th; he also participated in the program of the Conference on Cancer Diagnostic Tests, in Chicago, Illinois on October 14th.

Dr. D. R. H. Gourley, research assistant in pharmacology, gave a lecture entitled "Inhibition of the Radioactive Phosphate Uptake in Erythrocytes" at the meeting of the American Physiological Society, in Columbus, Ohio, on September 15, 1950.

Dr. Russell L. Haden,

Crozet, has been appointed medical director of the Red Cross National Blood Program, and will work with Dr. Ross T. McIntire, chairman of the blood bank's committee on medical policies and procedures. Dr. Haden is a native of Virginia and recently returned to this State from Ohio where he was head of the Department of Medicine at the Cleveland Clinic.

Rural Health Conference to be Held in Memphis.

The sixth annual National Conference on Rural Health will be held in Memphis, February 23-24.

It will be sponsored by the Committee on Rural Health of the American Medical Association in cooperation with national farm organizations.

More than 700 farm and health leaders—including representatives of health and farm groups, farm newspapers, agricultural extension organizations, rural health committees, schools, public health officials and others—are expected to attend. Sessions will be held in the Peabody Hotel.

The theme will be "Why Wait—Let's Do It Ourselves," according to Dr. F. S. Crockett of Lafayette, Ind., chairman of the committee, who will outline the national rural health program.

Communication for the Paralyzed.

A "Hand Talking Chart" has been devised by Dr. Hamilton Cameron of New York who, for two and a half years, was unable to express himself orally. His chart contains twenty-hand-signs by means of which an aphasic can make his wants known. Dr. Cameron feels his chart should be so useful that he offers to send one or more without charge to our readers upon request to him at 601 West 110th Street, New York 25, N.Y.

Dr. William H. Kaufman,

Roanoke, announces the removal of his office to the Carlton Terrace Building at 920 South Jefferson Street, that city. He will continue in the practice of his specialty, dermatology.

"Dr. Christian" Honored.

For some years the Medical Society of the District of Columbia has been awarding honors annually to two outstanding doctors but this year was the first time an additional award was given to a fictitious doctor. At the annual dinner of the Society in October, the certificate for meritorious service to medicine was presented to Jean Hersholt on behalf of his "Dr. Christian" who has been presenting the best qualities of the physician and impressing the public with the close relationship between the patient and the family doctor.

The Potomac Society of Anesthesiologists,

Composed of anesthesiologists of Virginia, West Virginia, Maryland and District of Columbia, met in Washington, November the 27th. The meeting was held jointly with the Section on Anesthesiology of the District, with Dr. William E. Bageant, presiding. The program included the presentation of cases and a panel discussion by the Anesthesia Study Committee. The next meeting will be on January 22, 1951. Dr. Joel B. Hoberman of 4700 Twentieth Road, North, Arlington, is secretary and will be glad to furnish information about the meeting.

Read the Ads in the Monthly.

Important messages are presented in the advertisements in our journal each month. New products are announced from time to time and information is presented regarding the use of products featured. Other types of ads emphasize services rendered and commodities offered that may be used in your practice, your office, and your home. We aim to include only ethical advertisements.

Tell advertisers that you saw their ad in the Monthly. It pleases them and helps us.

Information Wanted in Regard to "Dr. King".

The Minnesota State Board of Medical Examiners has been investigating the case of "Dr. Tracy A. King", a Canadian by birth, who claims he entered the United States at Noyes, Minnesota, August 15, 1949. He has had no medical education but has been carrying around a doctor's medical bag containing numerous surgical instruments, a stethoscope, and various medicinal preparations. Any information in regard to "Dr. King" should be sent at once to the Minnesota Board at 230 Lowry Medical Arts Building, St. Paul.

Dr. Thomas F. Wheeldon,

Richmond, was on November the 3rd made an honorary member of Rotary International, in recognition of his work among crippled children.

A Practical Course

For resuscitation of patients who die in the operating room will be offered this winter by Dr. Claude S. Beck, under the sponsorship of the Cleveland Heart Association. The course, available to surgeons and anesthetists, will extend over a three-day period and will be offered once each month from November through March.

For further details, write to Virginia Heart Association, 509-A South Jefferson Street, Roanoke, Virginia.

Medical Staff Conferences

Are held at Memorial Hospital, Winchester, monthly from October through May, with the exception of December. In October, Dr. Harrison F. Flip-

pin of Philadelphia talked on "Clinical Notes on Modern Chemotherapy", and in November, Dr. Frank H. Lahey of Boston, delivered the Annual Hunter H. McGuire Lecture on "Surgical Management of Lesions of the Esophagus, Stomach and Duodenum".

The lectures booked for 1951 are:

January 17—"Symposium on Liver Disease", by Dr. John C. Hortenstine, Dr. Carrington Harrison, Dr. George H. Murphy, and Dr. William H. Shafer, all of Winchester.

February 21 — "Medical Anesthesiology" — Dr. Edward B. Tuohy, Professor of Anesthesiology, Georgetown University Medical Center, Washington, D. C.

March 21—"The Relationship of Gallbladder Disease to the Subjective and Objective Manifestations of the Anginal Syndrome"—Dr. J. Edwin Wood, Professor of Medicine, The University of Virginia, Charlottesville.

April 18—"The Annual Frank N. Hack Lecture —Current Status of ACTH and Cortisone"—Dr. A. McGehee Harvey, Professor of Medicine, The Johns Hopkins University; and Physician-in-Chief, The Johns Hopkins Hospital, Baltimore, Maryland.

May 17—"Clinicopathological Conference"—The Staff of the Winchester Memorial Hospital.

World Medical Association.

Fourteen American business firms completely defrayed the expense of meals for scores of foreign physicians who attended the five-day assembly of the Association in New York, the middle of October, whose finances were limited by the dollar shortage of their respective countries. These were in the form of a series of luncheons and dinners throughout the convention period. Twenty other business organizations contributed typical products of their respective firms to the 120 gift boxes of the "American Welcome" luncheon, and United Florists' Trades, Inc., kept flowers in the hotel rooms of the guests.

Virginia Division, American Cancer Society.

Doctors among the officers of the division, named at the meeting in Williamsburg the latter part of October, include Dr. Guy W. Horsley, Richmond, as vice-president; Dr. Cooper, medical director; and the following among trustees-at-large: Dr. Guy R. Fisher, Staunton; Dr. William H. Parker, Charlottesville; Dr. John R. Mapp, Nassawadox; Dr. N. M. Canter, Harrisonburg; and Dr. H. S. Daniel, Louisa.

Piedmont Sanatorium,

Early in November, opened for inspection a new wing which has a 52-bed capacity on each floor and is part of the building program now nearing completion at that State institution.

State Hospital News.

Dr. Carlton G. Holland, Charlottesville, became clinical director of Western State Hospital at Staunton on November 1, succeeding Dr. Stuart C. Runkle who has been recalled to active duty with the Navy. Dr. Holland was formerly assistant professor in the department of neurology and psychiatry at the University of Virginia Medical School.

Dr. G. Earle Johnson has resigned as superintendent of DeJarnette State Sanatorium, effective January 1. to head the Hoye Sanitarium in Meridian, Miss., which he has purchased.

Dr. James W. Phillips,

Class of '47, Medical College of Virginia, announces his removal from Coeburn to Portsmouth, where he is located at 204 Rolen Drive.

Pan-Pacific Surgical Congress.

The Fifth Congress will be held in Honolulu *November 10-21, 1951.*

The object of the Pan-Pacific Surgical Association is to bring together surgeons from countries bordering on the Pacific Ocean so as to permit the exchange of surgical ideas and methods and to develop a spirit of good fellowship among the various races represented. Although it was planned that meetings would be held every three years, world events have permitted but four conferences since the organization was conceived—the first in 1929 and the last in 1948.

The Fifth Congress provides an opportunity for doctors to combine a delightful vacation in Hawaii with attendence at a scientific meeting, the program of which will be presented by topflight surgeons from the Pacific area countries, as planned by the program committee. Doctors are urged to bring their families with them and are promised luxurious accommodations.

Dr. F. J. Pinkerton, of Honolulu, President of the association, has been officially appointed as travel agent for those coming to the meeting. To be assured

of preferred accomodations, travel and hotel reservations should be made through Dr. Pinkerton.

Further information may be obtained by writing the Pan-Pacific Surgical Association office, Suite 7, Young Building, Honolulu, T. H.

Wanted Physician

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OBITUARIES

Dr. Stuart N. Michaux,

Widely known Richmond physician, died November 11, following an attack suffered the previous day while at his summer home on the Rappahannock. He was vice-president of the board of directors of Stuart Circle Hospital, Richmond, and since 1945 was emeritus professor of gynecology at the Medical College of Virginia. Dr. Michaux was seventy-two years of age and a graduate in medicine from the former University College of Medicine, Richmond, in 1903. He was connected with the faculty of the Medical College of Virginia from 1913 to 1945 and was a member of various medical organizations including the South Atlantic Association of Obstetricians and Gynecologists of which he was a charter member. He was also a member of various civic and social organizations. He is survived by his second wife.

Dr. Thomas Flatford Gill,

Well known physician of Richmond, died November the 2nd, at the age of seventy. He was born in Stafford County, this State, and graduated in medicine from the former University College of Medicine, Richmond, in 1908. He practiced for twelve years in Fauquier County before locating in Richmond in 1920. He was a member of the Richmond Academy of Medicine, Medical Society of Virginia and of the American Medical Association. He is survived by his wife and two sons, Drs. James T. and Fleming W. Gill of this city.

Dr. Delbert Lee LeKites,

For twenty-three years a resident of Chincoteague, was killed on the night of November the 2nd in an automobile accident when returning from a viait to a daughter in Atlantic City. He was seventy years of age and a graduate of the University of Louisville in 1909. On the 3rd, he was to have been the guest of honor at a Veterans of Foreign Wars banquet where he was to have received the organization's annual civic award for outstanding service to the community. He is survived by his wife and four children.

Dr. Emil Parks Amiss,

Retired physician of Martinsville, died November 3 in a convalescent home in Harrisonburg. He was seventy-eight years of age and a graduate of the former University College of Medicine, Richmond, in 1898. Dr. Amiss practiced in Page and Shenandoah Counties before locating in Martinsville. His wife survives him.

Dr. Percy Emerson Brown.

The magazine *Time,* in its October 23 issue, takes notice of the death of Dr. Brown, one of the prominent radiologists of the country. He set up the X-ray Department at Boston Children's Hospital in 1903 when the X-ray was only seven years old, and through his work in World War I and his civilian practice submitted to fifty or more operations as a result of burns on his hands and an eye.

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THE FULTON COUNTY MEDICAL SOCIETY

announces

THE ATLANTA GRADUATE MEDICAL ASSEMBLY

February 5, 6, 7, 1951

Municipal Auditorium Annex **Atlanta, Georgia**

DR. SARA M. JORDAN, Lahey Clinic.
1. Diagnosis of Cancer of the Stomach.
2. Medical Management of Peptic Ulcer.

DR. FRED W. RANKIN, Lexington, Ky.
1. Modern Management of Cancer of the Colon.
2. Modern Trends in the Management of Rectal Cancer.

DR. RICHARD B. CAPPS, Northwestern University.
1. Treatment of Cirrhosis of the Liver.
2. Diagnosis and Treatment of Amebiasis and Amebic Hepatitis.

DR. WALTMAN WALTERS, Mayo Clinic.
1. Cancer of the Stomach.
2. Surgery of the Biliary Tract.

DR. WARREN W. QUILLIAN, Coral Gables, Fla.
1. Infections in the Urinary Tracts of Children.
2. Diarrhea.

DR. GEORGE VAN S. SMITH, Harvard.
1. Dysfunctional Endometrial Bleeding.
2. Office Gynecology.

DR. JOHN PARKS, George Washington University.
1. Urinary Tract Infections in Pregnancy.
2. Placental Complications.

DR. J. S. SPEED, University of Tennessee.
1. Minor Surgery of the Foot.
2. Chronic Rheumatic Arthritis.

DR. IRVINE H. PAGE, Cleveland Clinic.
1. Diagnosis of Hypertension.
2. Treatment of Hypertension.

DR. JOHN R. GODWIN, Ochsner Clinic.
1. Melanomas.
2. Iodine —131.

DR. GEORGE J. THOMAS, University of Pittsburgh.
1. Fire and Explosive Hazards in Hospitals.

The following speakers have not announced their topics but will talk on the general subject given:

DR. WALTER BAUER, Harvard; Arthritis.
DR. WINCHELL McK. CRAIG, Mayo Clinic; Neurosurgery.
DR. CARLETON B. PEIRCE, McGill University; Radiology.
DR. GRAYSON L. CARROLL, St. Louis; Antibiotics.
DR. T. LEON HOWARD, Denver; Urology.
DR. JOHN R. MOTE, Chicago; ACTH.
DR. SAMUEL PROGER, Tufts Medical School; Cardiology.
DR. F. WM. SUNDERMAN, Atlanta; Clinical Pathology.

IMPORTANT: Because of other conventions here at the same time, hotel space will be at a premium. If you would like us to make your hotel reservation for you, please send registration fee of $15.00 and list hotels in the order of your choice. Address MRS. STEWART R. ROBERTS, *Executive Secretary*, 768 Juniper Street, N.E., Atlanta, Georgia.

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